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ACADEMICAL YEAR, 1922-1923.

SEPTEMBER, 1922

1	Friday	
2	Saturday	
3	**SUNDAY**	
4	Monday	Royal Victoria College opened, 1899. Labour Day. Library closed. Last day for receiving applications for the Matriculation Examination.
5	Tuesday	
6	Wednesday	
7	Thursday	
8	Friday	
9	Saturday	
10	**SUNDAY**	
11	Monday	Register opens for Students in Law.
12	Tuesday	
13	Wednesday	
14	Thursday	
15	Friday	Last day for Registration in Law.
16	Saturday	
17	**SUNDAY**	
18	Monday	Matriculation Examination begins. Exhibition, Scholarship and Supplemental Examinations in Arts. Conservatorium of Music opens. Lectures begin in Law.
19	Tuesday	Strathcona Medical Buildings opened, 1901. Register opens for students in Arts, Applied Science, Medicine and Dentistry.
20	Wednesday	
21	Thursday	
22	Friday	
23	Saturday	
24	**SUNDAY**	
25	Monday	
26	Tuesday	
27	Wednesday	
28	Thursday	
29	Friday	Last day for registration of new students in Arts, Applied Science Medicine and Dentistry.
30	Saturday	Last day for Registration of students previously enrolled.

OCTOBER, 1922

1	**SUNDAY**	
2	Monday	Lectures begin in Arts, Medicine and Applied Science. Meeting of Faculty of Applied Science.
3	Tuesday	
4	Wednesday	
5	Thursday	Physics Building Committee.
6	Friday	James McGill born, 1744. General Convocation for Conferring Degrees.
7	Saturday	
8	**SUNDAY**	
9	Monday	Summer Essays in Applied Science to be sent in. Library Committee Museum Committee.
10	Tuesday	William Molson Hall opened, 1862.
11	Wednesday	Regular Meeting of Corporation.
12	Thursday	
13	Friday	Meeting of Faculty of Arts.
14	Saturday	Conservatorium of Music opened 1904.
15	**SUNDAY**	
16	Monday	Engineering Building Committee. Chemistry and Mining Building Committee.
17	Tuesday	
18	Wednesday	
19	Thursday	
20	Friday	Intercollegiate Sports. No lectures.
21	Saturday	
27	**SUNDAY**	
25	Monday	
24	Tuesday	
25	Wednesday	
26	Thursday	
27	Friday	
28	Saturday	
29	**SUNDAY**	
30	Monday	
31	Tuesday	Redpath Library opened, 1893.

NOTE—The University is closed on Thanksgiving Day

NOVEMBER, 1922

1	Wednesday	
2	Thursday	
3	Friday	Meeting of Faculty of Arts.
4	Saturday	
5	**SUNDAY**	Macdonald College opened, 1907.
6	Monday	Meeting of Faculty of Applied Science.
7	Tuesday	
8	Wednesday	
9	Thursday	
10	Friday	
11	Saturday	
12	**SUNDAY**	
13	Monday	
14	Tuesday	
15	Wednesday	
16	Thursday	
17	Friday	
18	Saturday	
19	**SUNDAY**	
20	Monday	Engineering Building Committee. Chemistry and Mining Building Committee.
21	Tuesday	
22	Wednesday	
23	Thursday	
24	Friday	
25	Saturday	
26	**SUNDAY**	
27	Monday	
28	Tuesday	
29	Wednesday	
30	Thursday	

DECEMBER, 1922

1	Friday	Meeting of Faculty of Arts.
2	Saturday	
3	**SUNDAY**	
4	Monday	Meeting of Faculty of Applied Science.
5	Tuesday	
6	Wednesday	
7	Thursday	Physics Building Committee. Orchestral Concert, Faculty of Music.
8	Friday	
9	Saturday	
10	**SUNDAY**	
11	Monday	Library Committee. Museum Committee.
12	Tuesday	
13	Wednesday	Regular Meeting of Corporation.
14	Thursday	
15	Friday	
16	Saturday	
17	**SUNDAY**	
18	Monday	Engineering Building Committee. Chemistry and Mining Building Committee.
19	Tuesday	James McGill died, 1813. Chemistry and Mining Building opened, 1898.
20	Wednesday	
21	Thursday	
22	Friday	Christmas Vacation begins.
23	Saturday	
24	**SUNDAY**	
25	Monday	Christmas Day.
26	Tuesday	
27	Wednesday	
28	Thursday	
29	Friday	
30	Saturday	
31	**SUNDAY**	

JANUARY, 1923

1	Monday	New Year's Day.
2	Tuesday	
3	Wednesday	
4	Thursday	Lectures resumed in all Faculties.
5	Friday	Meeting of Faculty of Arts.
6	Saturday	
7	**SUNDAY**	
8	Monday	Meeting of Faculty of Applied Science.
9	Tuesday	
10	Wednesday	
11	Thursday	
12	Friday	
13	Saturday	First term lectures end in Arts, Law, Medicine and Applied Science.
14	**SUNDAY**	
15	Monday	Engineering Building Committee. Chemistry and Mining Building Committee.
16	Tuesday	First Term Examinations in Arts, Law and Medicine begin.
17	Wednesday	First Term Examinations in Applied Science begin.
18	Thursday	
19	Friday	
20	Saturday	
21	**SUNDAY**	
22	Monday	Second Term opens in Arts, Law, Medicine and Applied Science.
23	Tuesday	
24	Wednesday	
25	Thursday	
26	Friday	
27	Saturday	
28	**SUNDAY**	
29	Monday	
30	Tuesday	
31	Wednesday	

FEBRUARY, 1923

1	Thursday	
2	Friday	Meeting of Faculty of Arts.
3	Saturday	
4	**SUNDAY**	
5	Monday	Meeting of Faculty of Applied Science. Museum Committee. Library Committee.
6	Tuesday	
7	Wednesday	
8	Thursday	Physics Building Committee.
9	Friday	
10	Saturday	
11	**SUNDAY**	
12	Monday	
13	Tuesday	
14	Wednesday	Ash Wednesday. No lectures. Regular Meeting of Corporation.
15	Thursday	
16	Friday	
17	Saturday	
18	**SUNDAY**	
19	Monday	Engineering Building Committee. Chemistry and Mining Building Committee.
20	Tuesday	
21	Wednesday	
22	Thursday	
23	Friday	
24	Saturday	
25	**SUNDAY**	Physics and Engineering Buildings opened, 1893.
26	Monday	
27	Tuesday	
28	Wednesday	

MARCH, 1923

1	Thursday	Orchestral Concert, Faculty of Music.
2	Friday	Meeting of Faculty of Arts.
3	Saturday	
4	**SUNDAY**	
5	Monday	Meeting of Faculty of Applied Science.
6	Tuesday	
7	Wednesday	
8	Thursday	
9	Friday	
10	Saturday	
11	**SUNDAY**	
12	Monday	
13	Tuesday	
14	Wednesday	
15	Thursday	
16	Friday	
17	Saturday	
18	**SUNDAY**	
19	Monday	Engineering Building Committee. Chemistry and Mining Building Committee.
20	Tuesday	
21	Wednesday	
22	Thursday	
23	Friday	
24	Saturday	
25	**SUNDAY**	
26	Monday	
27	Tuesday	
28	Wednesday	
29	Thursday	
30	Friday	Good Friday. No lectures. Library closed.
31	Saturday	No Lectures.

APRIL, 1923

1	**SUNDAY**	Easter Sunday.
2	Monday	Meeting of Faculty of Applied Science. No lectures in Law.
3	Tuesday	
4	Wednesdy	
5	Thursday	Macdonald Engineering Building burned, 1907. Physics Bulding. Committee.
6	Friday	Meeting of Faculty of Arts.
7	Saturday	
8	**SUNDAY**	
9	Monday	Library Committee, Museum Committee.
10	Tuesday	
11	Wednesday	Regular Meeting of Corporation.
12	Thursday	Second term lectures end for the first three years in the Faculty of Applied Science.
13	Friday	
14	Saturday	
15	**SUNDAY**	
16	Monday	Medical Building burned, 1907. Engineering Building Committee Chemistry and Mining Building Committee.
17	Tuesday	Sessional Examinations in Applied Science begin, for the first three years
18	Wednesday	
19	Thursday	
20	Friday	
21	Saturday	
22	**SUNDAY**	
23	Monday	
24	Tuesday	
25	Wednesday	
26	Thursday	Orchestral Concert, Faculty of Music.
27	Friday	New Engineering Building opened, 1909.
28	Saturday	Lectures end in Arts and in Fourth Year Applied Science.
29	**SUNDAY**	
30	Monday	Summer School in Applied Science opens.

MAY, 1923

1	Tuesday	
2	Wednesday	
3	Thursday	Examinations begin in Arts and Applied Science.
4	Friday	Meeting of Faculty of Arts. Last day of lectures in Law.
5	Saturday	
6	**SUNDAY**	
7	Monday	Meeting of Faculty of Applied Science. Sessional Examinations begin in Law.
8	Tuesday	
9	Wednesday	
10	Thursday	
11	Friday	
12	Saturday	
13	**SUNDAY**	
14	Monday	
15	Tuesday	
16	Wednesday	
17	Thursday	
18	Friday	
19	Saturday	
20	**SUNDAY**	
21	Monday	Engineering Building Committee. Chemistry and Mining Building Committee.
22	Tuesday	
23	Wednesday	
24	Thursday	Victoria Day. Library closed.
25	Friday	
26	Saturday	Summer School in Applied Science ends.
27	**SUNDAY**	
28	Monday	
29	Tuesday	Convocation for conferring Degrees.
30	Wednesday	
31	Thursday	

JUNE, 1923

1	Friday	
2	Saturday	
3	**SUNDAY**	King's Birthday.
4	Monday	
5	Tuesday	New Medical Building opened 1911,
6	Wednesday	
7	Thursday	Physics Building Committee.
8	Friday	
9	Saturday	
10	**SUNDAY**	
11	Monday	Library Committee. Museum Committee.
12	Tuesday	
13	Wednesday	Regular Meeting of Corporation.
14	Thursday	
15	Friday	
16	Saturday	
17	**SUNDAY**	
18	Monday	Engineering Building Committee. Chemistry and Mining Building Committee.
19	Tuesday	
20	Wednesday	
21	Thursday	
22	Friday	
23	Saturday	
24	**SUNDAY**	
25	Monday	
26	Tuesday	
27	Wednesday	
28	Thursday	
29	Friday	
30	Saturday	

JULY, 1923

1	**SUNDAY**	Dominion Day.
2	Monday	
3	Tuesday	
4	Wednesday	Gift of Frothingham, Molson and Law Properties by Sir Wm. Macdonald, 1911.
5	Thursday	
6	Friday	
7	Saturday	
8	**SUNDAY**	
9	Monday	
10	Tuesday	
11	Wednesday	
12	Thursday	
13	Friday	
14	Saturday	
15	**SUNDAY**	
16	Monday	
17	Tuesday	
18	Wednesday	
19	Thursday	
20	Friday	
21	Saturday	
22	**SUNDAY**	
23	Monday	
24	Tuesday	
25	Wednesday	
26	Thursday	
27	Friday	
28	Saturday	
29	**SUNDAY**	
30	Monday	
31	Tuesday	

AUGUST, 1923

1	Wednesday	
2	Thursday	
3	Friday	
4	Saturday	
5	**SUNDAY**	
6	Monday	
7	Tuesday	
8	Wednesday	
9	Thursday	
10	Friday	
11	Saturday	
12	**SUNDAY**	
13	Monday	
14	Tuesday	
15	Wednesday	
16	Thursday	Peter Redpath Museum opened, 1882.
17	Friday	
18	Saturday	
19	**SUNDAY**	
20	Monday	
21	Tuesday	
22	Wednesday	
23	Thursday	
24	Friday	
25	Saturday	
26	**SUNDAY**	
27	Monday	
28	Tuesday	
29	Wednesday	
30	Thursday	
31	Friday	

McGill University.

HISTORY AND CONSTITUTION

FOUNDATION AND EARLY HISTORY.

McGill University owes its origin to a private endowment. It was founded by the Hon. James McGill, a leading merchant and public-spirited citizen of Montreal, who died in 1813. By his will, dated January 8th, 1811, he bequeathed his property of Burnside (consisting of 46 acres of land with the dwelling house and other buildings thereon) and a sum of £10,000 in money to found a college in a provincial university, the erection of which had already been provided for by the British Government. The four trustees appointed under his will were directed to convey the property of the bequest to the Royal Institution for the Advancement of Learning, a body which, in 1802, had been incorporated by the Legislature "for the establishment of free schools and the advancement of learning" in the Province of Quebec. The conditions upon which the property was to be transferred to the Royal Institution for the Advancement of Learning were, mainly, that that Institution should, within ten years after the testator's decease, erect and establish on his Burnside estate "a University or College, for the purposes of education and the advancement of learning in this Province," and that the college, or one of the colleges in the University, if established, should "be named and perpetually be known and distinguished by the appellation of McGill College." Owing to persistent opposition by the leaders of one section of the people to any system of governmental education and to the refusal by the Legislature to make the grants of land and money which had been promised, the proposed establishment of the provinical university by the British Government was abandoned.

In so far as the McGill College was concerned, however, the Royal Institution at once took action by applying for a Royal Charter. Such a charter was granted in 1821, and the Royal Institution prepared to take possession of the estate, but, owing to protracted litigation, this was not surrendered to them till 1829, when the work of teaching was begun in two faculties, Arts and Medicine. The record of the first thirty years of the University's existence is an unbroken tale of financial embarrassment and administrative difficulties. The charter was cumbrous and unwieldy, and unsuited to a small college in the circumstances of this country, and the University, with the exception of its medical faculty, became almost extinct. But after thirty years the citizens of Montreal awoke to the value of the institution which was struggling in their midst. Several gentlemen under-

took the responsibility of its reorganization, and, in 1852, an amended charter was secured. The Governor-General of Canada for the time being, Sir Edmund Head, became interested in its fortunes, and in 1855, with the advent of a new Principal, an era of progress and prosperity began.

A course in Law was begun in connection with the Faculty of Arts, in 1848, and the department was established as a separate faculty in 1853. The Faculty of Applied Science was not regularly organized till 1878, but a course in Engineering, which was amplified into the Department of Practical Science in 1871, was given under the Faculty of Arts as far back as 1856. The Faculty of Agriculture was established in 1907.

Principal Dates in the History of the University.

First Charter obtained.—1821.

College opened.—1829.

Amended Charter secured.—1852.

William Molson Hall opened.—October 10th, 1862.

Peter Redpath Museum opened.—August 16th, 1882.

Physics and Engineering Buildings opened.—February 24th, 1893.

Redpath Library opened.—October 31, 1893.

Chemistry and Mining Building opened.—December 20th, 1898.

Royal Victoria College opened.—September 4th, 1899.

Strathcona Medical Buildings opened.—September 18th, 1901.

Conservatorium of Music opened.—October 14th, 1904.

Macdonald Engineering Building burned.—April 5th, 1907.

Medical Building burned.—April 16th, 1907.

Macdonald College opened.—November 5th, 1907.

New Engineering Building opened.—April 27th, 1909.

New Medical Building opened.—June 5th, 1911.

Gift of Frothingham, Molson, and Law properties (comprising about 25 acres), from Sir William C. Macdonald.—July 4th, 1911.

One million five hundred thousand dollars raised (chiefly from Montreal citizens) in aid of the funds of the University.—November 20-24, 1911.

Gift of $1,000,000 from the Carnegie Corporation, New York, "in recognition of the noble and devoted service and sacrifice of McGill towards Canada's part in the Great War."—February 25th, 1918.

Over $4,000,000 subscribed by citizens of Montreal and graduates for the funds of the University: also $1,000,000 granted for the same purpose by the Government of the Province of Quebec, and $1,000,000 by the Rockefeller Foundation of New York for medical education.—November 15th to November 20th, 1921.

GOVERNMENT OF THE UNIVERSITY

By the amended Charter "the Governors, Principal, and Fellows" of the University are constituted a body politic and corporate, with all the usual rights and privileges of corporate bodies. The supreme authority, however, is vested in the Crown, and is exercised by His Excellency the Governor-General of Canada, for the time being, as **Visitor.** This is a special and important feature of the constitution, for, while it gives the University an imperial character and removes it at once from any merely local or party influence, it secures the patronage of the head of the political system of the country.

The **Governors** of the University are the members of the Royal Institution for the Advancement of Learning, above mentioned, and in them are vested the management of finances, the passing of University statutes and ordinances, the appointment of professors, and other important duties. Their number is limited to twenty-five. Three of these are elected by the members of the Graduates' Society and other appointments are made by the nomination of the remaining members with the approval of the Visitor. The President of the Board of Governors is *ex-officio* Chancellor of the University.

The **Principal** is the academic head and chief administrative officer. He is appointed by the Board of Governors (of which body he is a member *ex-officio*). He also holds the office of Vice-Chancellor of the University.

The **Fellows** (42 in number) are selected with reference to the representation of all the faculties and departments of the University, and of the graduates, affiliated colleges, and other bodies.

The Governors, Principal and Fellows together, constitute the **Corporation** the highest academical body. Its powers are fixed by statute, and include the framing of all regulations touching courses of study, matriculation, graduation, discipline and the granting of degrees.

The carrying out of the regulations of Corporation along with primary responsibility for the conduct of the educational work of the University, is entrusted to the several **Faculties,**—Arts, Medicine, Law, Applied Science, Agriculture, Dentistry and Music.

INCORPORATED AND AFFILIATED COLLEGES.

INCORPORATED COLLEGES.

Macdonald College is situated at Ste. Anne de Bellevue, about twenty miles from Montreal. It consists of three departments:—The School of Agriculture, the School of Household Science, and the School for Teachers. Courses leading to the Bachelor's and Master's degrees in Agriculture are under the control of the Corporation of McGill University; all the short term courses in agriculture, as well as the course in domestic science, are under the direction of the Macdonald College Committee; and those for diplomas to teach in the Province of Quebec are subject to the immediate supervision of the Teachers' Training Committee. Full information is given in the Macdonald College Announcement, which will be sent on application to the Principal, Macdonald College, Que.

The Royal Victoria College is the women's College of McGill University for courses in the Faculty of Arts. For further particulars, see pages 391-396.

AFFILIATED COLLEGES.

Acadia, Alberta and Mount Allison Universities and the University of St. Francis Xavier's College are affiliated to McGill University to the extent that students who have completed the two-year course in engineering given by these universities are admitted directly to the Third Year in any of the engineering courses in the Faculty of Applied Science.

Students from these universities entering the Third Year must take the summer school suitable to their course, in May, or the special school in September, which will open in 1922 on September 5th.

Alberta University is also affiliated in the Faculty of Medicine, students who have completed the Third Year in the Medical course there being admitted directly to the Fourth Year in the Faculty of Medicine of this University.

Royal Military College.—Graduates of the Royal Military College of Kingston are admitted to the Third Year in the several engineering departments of the Faculty of Applied Science. They must in all cases take the respective summer schools pertaining to these several courses, which are held in September, beginning in 1922 on the 5th of that month.

Arrangements have also been made whereby graduates and students of the Mechanical Science course in the University of Cambridge will be admitted to advanced standing in the Faculty of Applied Science under definite regulations, particulars of which can be obtained from the Dean of the Faculty.

AFFILIATED THEOLOGICAL COLLEGES

The Theological Colleges named below are affiliated to the University under the following arrangements:—Students in these institutions who are pursuing a double course in Arts and Theology (six years at least) will be exempted from a half course in Arts in each of the Third and Fourth Years or a whole course in either.

The Congregational College of Canada, Montreal.—Principal, Rev. D. L. Ritchie, B.A., D.D., 58 McTavish St.

The Diocesan College of Montreal.—Principal, Rev. E. I. Rexford, M.A., LL.D., 743 University St.

The Presbyterian College, Montreal, in connection with the Presbyterian Church in Canada.—Principal, Rev. D. J. Fraser, M.A., LL.D., D.D., 69 McTavish St.

The Wesleyan College of Montreal.—Principal, Rev. James Smyth, LL.D., 760 University St.

A movement was inaugurated in the session 1912-13 for a large measure of co-operation among the above Colleges, with the result that a considerable portion of the work which had hitherto been done separately is now taken in joint classes.

For Calendars and all necessary information, apply to the Principals of the several Colleges.

AFFILIATION TO OTHER UNIVERSITIES

The University is affiliated to the universities of Oxford, Cambridge and Dublin, under conditions which allow an undergraduate who has taken two years' work, and has passed the Second Year sessional examination in Arts, to pursue his studies and take his degree at any of these universities on a reduced period of residence.

FACULTIES, COURSES AND DEGREES

The educational work of the University is carried on in McGill College, the Royal Victoria College for Women, and other University buildings in Montreal; and also in Macdonald College at Ste. Anne de Bellevue.

COURSES FOR DEGREES AND DIPLOMAS

The several courses offered by the University are as follows:—

In the Faculty of Arts.

For the degree of Bachelor of Arts (B.A.).
" " " " Bachelor of Science (B.Sc. in Arts).
" " " " Bachelor of Commerce (B.Com.).

The undergraduate courses of study which lead to the degree of B.A. or B.Sc. extend over four sessions of eight months each. In the Second, Third and Fourth years extensive options are provided, and certain exemptions are also allowed to professional students. See page 126.

The course for the degree of Bachelor of Commerce extends over three years. (Full information is given on pp. 176 to 187.)

The following courses are also offered:—One leading to the Degree of Bachelor of Science in Agriculture, with the privilege of qualifying for an Academy Diploma; and another to the degree of Bachelor of Household Science. The first two years are taken in the Faculty of Arts and the last two in the Faculty of Agriculture, or the School of Household Science, as the case may be. Details of these two courses will be found in the Macdonald College Announcement.

The undergraduate course in Arts can be taken along with the undergraduate course in Medicine, in eight years, or with that in Applied Science or Dentistry, in six years.

The courses in Arts are open to women (who are educated mainly in separate classes) on equal terms with men. Residential accommodation for women students is provided in the Royal Victoria College. (For further particulars, see pages 391-396.)

Holders of the degree of B.A. from this University are admitted to the study of the learned professions, without preliminary examination, in the different provinces of Canada, and in Great Britain and Ireland, and elsewhere. They will also be granted Academy Diplomas to teach in the Province of Quebec, provided they have passed an examination in pedagogy and have taught, under supervision, for the time required by law.

In the Faculty of Applied Science.

For the degree of Bachelor of Architecture (B.Arch.).

For the degree of Bachelor of Science (B.Sc.), in the departments of Chemical Engineering, Civil Engineering, Electrical Engineering, Mechanical Engineering, Metallurgical Engineering, and Mining Engineering.

The undergraduate courses of study for the degree of B.Sc. extend over four sessions, averaging (with summer sessions) about eight months each, and provide a thorough professional training in the departments mentioned above. The course for the degree of B.Arch. extends over five years. Full particulars are given on pages 191-193 and 213-218.

The undergraduate course in Arts can be taken along with the undergraduate course in Applied Science in six years.

In the Faculty of Law.

For the degree of Bachelor of Civil Law (B.C.L.).
" " " " Bachelor of Laws (LL.B.).

The undergraduate course for each of these degrees extends over three sessions of eight and a half months each.

In the Faculty of Medicine.

For the degree of Doctor of Medicine and Master of Surgery (M.D., C.M.).

For the degree of B.Sc. in Medicine.

For the Diploma of Public Health.

For the Diploma of Pharmacy.

The undergraduate course of study leading to the degree of M.D., C.M., extends over six sessions of eight months each. For further information regarding the first three courses see pp. 264-304. and for details of the course in Pharmacy see pages 308-316.

The undergraduate course in Arts can be taken along with the undergraduate course in Medicine in eight years.

In Macdonald College.

For the degree of Bachelor of Science in Agriculture (B.Sc. in Agriculture and B.S.A.).

Other courses in the School of Agriculture.

For the degree of Bachelor of Household Science (B.H.S.), two years in Arts, and two in the School of Household Science.

Other courses in the School of Household Science.

The several courses for teachers' diplomas.

The course of study for the degree of Bachelor of Science in Agriculture extends over four sessions of about eight months each. It aims to provide a thorough theoretical and practical training in the several branches of the science.

Postgraduate courses, also, may be followed in the Agronomy, Bacteriology, Botany, Entomology and Zoology departments. The degrees offered are M.S.A., M.Sc. and Ph.D.

The Macdonald College Announcement, containing full details as to buildings, courses, terms of admission, fees, etc., can be obtained from the Principal, Macdonald College, P.O., Que.

In the Faculty of Dentistry.

For the degree of Doctor of Dental Surgery (D.D.S.).

The undergraduate course of study leading to the degree of D.D.S. extends over four sessions of eight months each. (For further particulars, see pp. 333-351.)

The undergraduate course in Arts can be taken along with the undergraduate course in Dentistry in six years.

In the Faculty of Music.

For the degree of Bachelor of Music (Mus. Bac.).

For the Diploma of Licentiate in Music, and the several Grade examination certificates.

Students are admitted as *Regular Students* taking an organized course leading to the Diploma of Licentiate in Music or the degree of Bachelor of Music or as *Partial Students*, who, under certain conditions and after examination, can obtain certificates bearing the imprimatur of the University. Full details can be obtained on application to the Secretary of the McGill Conservatorium of Music, 323 Sherbrooke St. West Montreal.

In the School of Graduate Studies and Research.

For the degrees of Master of Arts (M.A.), Master of Science (M.Sc.), Master of Laws (LL.M.), Master of Science in Agriculture (M.S.A.), Doctor of Philosophy (Ph.D.), Doctor of Science (D.Sc.), Doctor of Literature (Litt.D.), Doctor of Civil Law (D.C.L.), and Doctor of Music (Mus. Doc.).

Full information as to admission and departments in which studies are offered will be found on pp. 364-390.

The degree of Doctor of Laws is given only as an honorary degree.

The Course for the First Class Academy Diploma of the Province of Quebec.

Certain courses are given by the Department of Education, which when supplemented by practice teaching and observation (except in the case of holders of the Intermediate Diploma, who have already satisfied these requirements) lead to a First Class High School Diploma on graduation.

The latter diploma can also be obtained by those who qualify for the degree of B.Sc. in Agriculture by taking two years in Arts, followed by two in the Faculty of Agriculture. (See Macdonald College Announcement.)

Extension Courses.

Evening lectures on a variety of subjects. Particulars will be found on pp. 415-420.

School for Graduate Nurses.

Three courses, each covering an academic year, and leading to a certificate: (a) For Public Health Nursing; (b) Teaching in Schools of Nursing; (c) Administration in Schools of Nursing. See pages 435-445.

School of Physical Education.

Two-year course, leading to a diploma. Full particulars can be obtained from the Secretary of the School, Molson Hall, Arts Building.

Library School.

A course extending throughout the session and leading to a diploma.

ENTRANCE REQUIREMENTS.

JUNIOR MATRICULATION.

I. REGULATIONS.

1. Matriculation examinations (for entrance into all Faculties) are held only in June and Spetember—in June at McGill University and local centres; in September, at Montreal only, except in cases which require special consideration.

ALL INQUIRIES RELATING TO THE EXAMINATION SHOULD BE ADDRESSED TO THE REGISTRAR OF THE UNIVERSITY.

For the convenience of candidates in Great Britain, who are not otherwise qualified for entrance, an examination will be held regularly in London, Eng., each year, commencing on or about the 12th of June. Full information regarding the exact date of the examination, fee, etc., may be obtained from the Honorary Representative of the University, W. A. Bulkeley-Evans, Esq., M.A , Secretary Headmasters' Conference, 5 Paper Buildings, Temple, London, E.C. 4.

2. Every candidate for examination is required to fill up an application form and return the same with the necessary fee (for which see page 51) one month before the examination begins. Blank forms may be obtained from the Registrar.

No application for examination in June will be received after May 20th.

3. Candidates will not be considered as having passed in any subject unless they obtain at least 50 per cent. of the maximum marks in that subject (in subjects in which two papers are set, 50 per cent. on the two and not less than 40 in either).

This regulation applies also in the case of certificates.

4. Candidates for admission to the Faculties of Arts, Applied Science, Agriculture and the Department of Music who have failed to complete the matriculation requirements will be allowed to enter the First Year as conditioned undergraduates, provided (a) that they have not failed in more than two papers (which cannot both be in the mathematical section, nor in two languages) and (b) that they have obtained at least 25 per cent. in the subjects in which they have failed and 50 per cent. of the aggregate.

This regulation applies also to candidates who seek to satisfy the matriculation requirements by means of certificates granted by other recognized examining bodies.

The condition must be removed before the student can be admitted to the Second Year.

In order to be admitted to the Faculty of Dentistry, a candidate must pass in every subject required.

Students who are conditioned in a language must attend a special tutorial class during their first session, for which a fee of $10.00 is exigible. Any student so conditioned who fails to attend this class with regularity will not be allowed to present himself for examination.

5. Matriculation certificates will be issued to candidates who have passed the entrance examination conducted by the University, but not to those who have qualified by means of certificates, except when the greater part of the requirements has been satisfied by passing the University examination.

6. The certificates and diplomas named below will, if submitted to the Registrar, be accepted *pro tanto* in lieu of the junior matriculation examination, *i.e.*, in so far as the subjects and standard of the examination taken to obtain them are, to the satisfaction of the Matriculation Board, equivalent to those required for the matriculation examination of this University. Candidates offering certificates which are not a full equivalent will be required to pass the matriculation examination at the regular time set therefor (June or September), in such of the necessary subjects as are not covered thereby.

Intending students who wish to enter by certificates should under no circumstances come to the University without having first obtained from the Registrar a statement of the value of the certificates they hold, as many of these lack one or more essential subjects, or the work done in a subject may not be adequate, or again, the percentage gained may not be sufficiently high (see regulation 3). Moreover, it must be remembered that a certificate may admit to one Faculty and not to another. When a diploma or certificate does not show the marks obtained in the several subjectsof the examination, it must be accompanied by an official statement containing this information

Province of Quebec.

The University School Leaving Certificate.
The Intermediate School Diploma.

Province of Ontario.

Certificate of entrance to the Normal Schools.
Junior Matriculation Certificate.

Province of New Brunswick.

First Class, Superior and Grammar School Licenses.
Grades XI and XII Certificates.

Province of Nova Scotia.

The Leaving Certificate of Grade XI.

Province of Prince Edward Island.

First Class Teachers' License.
Second Year Certificate of Prince of Wales College.

Province of British Columbia.

Intermediate Grade Certificate.

Province of Manitoba.

Second Class Teachers' Certificate.
Grade XI Certificate.

Provinces of Alberta and Saskatchewan.

The Departmental Certificate of Standard XI.

Newfoundland.

Associate Grade Certificate.

United States.

Certificates granted by the College Entrance Examination Board and by the New York State Board of Regents.

Great Britain.

The holder of a Higher Certificate or a School Certificate of the Oxford and Cambridge Schools Examination Board, of the Senior Certificate of the Oxford or Cambridge Board of Examiners, of a First Class Certificate of the College of Preceptors or of a Higher Examination Certificate of the Scotch and Welsh Educational Departments is entitled to exemption from the matriculation examination, *pro tanto*, if the candidate has at one and the same examination passed in certain specified subjects.

Applications for exemption from the matriculation examination, based upon certificates of having passed examinations other than those above mentioned, will be considered as occasion may require. Every such application must be accompanied by certificates and full particulars, and should be addressed to the Registrar.

II. JUNIOR MATRICULATION EXAMINATION FEES.

For an examination in six or more papers	$7.00
(For an examination at a local centre where not more than four candidates are writing, the fee will be determined by the Registrar.)	
For an examination in from three to five papers	4.00
For an examination in one or two papers	2.00
For examination of certificates, in respect of which candidates are exempted from the whole of the matriculation examination	2.00

Matriculation examination fees must be sent to the University Registrar at the time of application for the examination. No application will be accepted unless accompanied by the regular fee.

Certificates will be issued to successful candidates without additional fee.

II. SUBJECTS OF EXAMINATION.

Faculty of Arts.

For candidates intending to take the B.A. course.

1. **English** (two papers).
2. **History** (one paper).
3. **Latin** *or* **Greek** (two papers).
4. One of the following (two papers in each):
   Greek *or* **Latin** (the one not already chosen),
   French, German, Spanish.
5. **Elementary Mathematics** [**Algebra** (one paper) and **Geometry** (on) paper).]
6. One of the following:
   Botany, Chemistry, Physics, Physical Geography (one paper); a **Language** not already chosen (two papers).

(Candidate are advised to choose Physics under this head.)

Holders of Intermediate Diplomas who are certified by the Dean of the School for Teachers of Macdonald College to have taken 75 per cent. of the total marks at their final examinations, with not less than 50 per cent. of the marks in (1) mathematics, (2) French, and (3) Latin or Greek, respectively, will be admitted without further examination as undergraduates of the First Year in Arts.

For candidates intending to take the B.Sc. course in Arts, or the course leading to the degree of Bachelor of Science in Agriculture or to the degree of Bachelor of Household Science (two years in Arts and two in Agriculture, or in Household Science, as the case may be).

1. **English** (two papers).
2. **History** (one paper).
3. **French** (two papers).
4. **Latin** *or* **German** *or* **Spanish** (two papers) *or* **Physics** (one paper).
5. **Elementary Mathematics** [**Algebra** (one paper) and **Geometry** (one paper).]
6. One of the following:
   Botany, Chemistry, Physics (if not already chosen), **Physical Geography** (one paper); **Latin,** if not already chosen (two papers); **Greek** (two papers).

(*Candidates are advised to choose Physics under this head*)

Candidates who intend ultimately to proceed to the study of Medicine are reminded that for medical registration it is necessary to take Latin.

For candidates entering on the course for the Degree of Bachelor of Commerce.

The ordinary matriculation examination for the B.A., or the B.Sc. Course, except that in the case of the latter, Spanish may be taken under No. 3.

Faculty of Applied Science.

(*For all courses leading to the Degree of B.Sc. in the different branches of Engineering.*)

1. **English** (two papers).
2. **History** (one paper).
3. One of the following:
   French, German, Spanish, Latin, Greek (two papers).
4. **Elementary Mathematics** [**Algebra** (one paper) and **Geometry** (one paper).]
5. **Advanced Mathematics** [**Algebra** (one paper), **Geometry** (one paper), **Trigonometry** (one paper).]
6. One of the following:
   Botany, Chemistry, Physics, Physical Geography (one paper),
   a **Language** not already chosen (two papers).
   (*Candidates are advised to take Physics under this head.*)

For the course leading to the Degree of B.Arch.

The same as for entrance to the Engineering Course as shown above, with Freehand and Geometrical Drawing added.

In the case of Drawing applicants may send specimens of their work to the Head of the Department or take an examination at the time of the regular matriculation examination in September. No examinations taken elsewhere are accepted as an equivalent for this subject.

No student will be admitted to the Department of Architecture as an undergraduate, until he has satisfied the matriculation requirements in this subject.

Faculty of Dentistry.

1. **English** (two papers).
2. **History** (one paper).
3. **Latin** (two papers).
4. One of the following (two papers in each):—
   French, German, Greek.
5. **Elementary Mathematics** [**Algebra** (one paper) and **Geometry** (one paper).]

6. One of the following:—

Botany, Chemistry, Physics, Physical Geography (one paper).

In addition to the certificates mentioned on page 50, a certificate of having passed the preliminary examination for registration of a Provincial or State Dental Council will be accepted in lieu of the matriculation examination in this Faculty. No candidate will be admitted to the Faculty of Dentistry without having satisfied all the matriculation requirements.

Faculty of Agriculture

1. **English** (two papers).
2. **History** (one paper).
3. **Latin** *or* **French** *or* **German** *or* **Spanish** (two papers) (French preferred).
4. **Elementary Mathematics Algebra** (one paper) and **Geometry** (one paper).
5. Any one of the following:
   Botany, Chemistry, Physics, Zoology, Physical Geography (one paper).

A School Leaving Certificate of the Province of Quebec or an Intermediate Diploma, or a matriculation certificate for entrance to any other Faculty of the University will also be accepted.

Candidates, without academic training sufficient to qualify for entrance by any of the methods above, who are at least twenty years of age and possess a substantial farm experience, together with mental endowments sufficient to successfully undertake the course despite some academic handicap, may be admitted to the course by an Admission Committee, provided that students so admitted be required to obtain matriculation standing before entering the Third Year class.

Opportunity for Matriculation.—A limited number of students who have not matriculation standing, but who think they might be able to obtain it after one or two years' study, can be accommodated in residence and take work at the High School, provided they are sufficiently advanced to enter Grade X or XI.

School of Physical Education.

The Subjects required for the Faculty of Agriculture, as shown above.

Faculty of Music.

The examination for entrance to the Faculty of Arts, with Rudiments of Music added, *or* the following:—

1. **English** (two papers).
2. **History** (one paper).

3. Two of the following:
   French, German, Spanish, Italian, Latin (two papers).
4. **Arithmetic** *or* **Algebra** *or* **Geometry** (one paper).
5. **Rudiments of Music** musical intervals, scales clefs, time signatures, construction of chords, elementary harmony to chord of dominant seventh (one paper).

For requirements for entrance to Law and Medicine, see under Senior Matriculation, pp—67 to 70.

IV. REQUIREMENTS IN EACH SUBJECT.

Arithmetic.*

All the ordinary rules, including square root, and a knowledge of the metric system.

One examination paper.

History and Historical Geography.

The Groundwork of British History, editors Warner and Marten (Blackie & Sons, Edinburgh), Vol. III. with appendix (from 1714 to 1911); Canadian History (Grant), 1763 to date.

For candidates outside of Canada an option will be allowed in this subject on British History from 1485 to 1911, same text-book as is prescribed above, Secs. II and III.

The geography required will be that relating to the history prescribed.

An option will be allowed on the Ontario requirements in this subject, viz., British and Ancient History.

English.

A. *Composition.* As in the Ontario High School Composition, pages 198 to the end (Copp, Clark Co.), with a short essay on a general subject and two or three others based on the works prescribed for reading, as follows:—Shakespeare, The Tempest; George Eliot, Silas Marner (The Macmillan Co. of Canada); Macaulay, Warren Hastings.

These books should be read carefully, but the student's attention should not be so fixed upon details that he fails to appreciate the main purpose and beauty of the work.

Frequent practice in composition is essential.

B. *Literature* (for critical study).—Shakespeare, Julius Cæsar; Poems of the Romantic Revival, pages 107 to 200 (Copp, Clark Co., Ltd., Toronto).

Candidates will be expected to have memorized some of the finest passages.

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*For candidates intending to enter the Faculty of Music.

Two examination papers; one on Composition and the other on Literature (for critical study).

An alternative paper will be set on the work specified in English for the Junior Matriculation Examination of the Province of Ontario.

Spelling will be tested by the candidates' papers in English. Examiners in other subjects will also take note of mis-spelled words and will report flagrant cases to the Board.

Greek.

Text.—Philpotts and Jerram, Easy Selections from Xenophon, chaps. 3, 4, 5; Homer, Iliad I, lines 1 to 350.

Grammar.—Knowledge of grammar will be tested by translation and by grammatical questions based on the specified texts.

Translation at Sight from Greek into English.

Two examination papers; one on Xenophon and Composition, the other on Homer and Translation at Sight.

Alternative questions will be set on the work prescribed in Greek for the Junior Matriculation Examination of the Province of Ontario, if this differs from that specified above.

At the September examination other texts equivalent to those specified may be accepted, if application be made to the Registrar at least one month before the date of the examination.

Latin.

Texts.—Cæsar, De Bello Gallico, Book IV, chaps. 20 to 38, and Book V, chaps. 1 to 23; Virgil, Aeneid I (Wainwright, Bell's Illustrated Classics).

Grammar.—Knowledge of grammar will be tested by translation and composition, and by grammatical questions based on the specified texts.

Translation at Sight from Latin into English.

Composition.—Translation into Latin of detached English sentences and easy narrative based on the prescribed texts.

Two examination papers; one on Cæsar and Composition, and the other on Virgil and Translation at Sight.

Note.—The "Roman" method of pronouncing Latin is recommended.

An alternative paper will be set on the Latin texts prescribed for the Junior Matriculation Examination of the Province of Ontario, if these differ from those specified above.

At the September examination other texts in Latin equivalent to those specified may be accepted, if application be made to the Registrar at least a month before the day of examination.

French.

Grammar.—A thorough knowledge of French accidence and of those points of syntax which are of more frequent occurrence in an ordinary easy style.

Translation at Sight into English of a French passage of moderate difficulty.

Translation at Sight into French of detached English sentences and an easy English passage. Material for such translation is selected with a view to testing the candidate's general knowledge of French grammar.

Books recommended:—Fraser and Squair's French Grammar or Bertenshaw's French Grammar (Longmans), and Cameron's Elements of French Prose Composition (Holt & Co.).

A list of French texts suitable for class reading can be obtained by applying to the Registrar.

Two examination papers; one on grammar, including translation of short English sentences into French, and one on translation of continuous passages from French into English and from English into French.

German.

Grammar.—A thorough knowledge of German accidence and syntax, as in Van der Smissen, or any other German grammar of equally good standing.

Translation at Sight into English of a German passage of moderate difficulty.

Translation into German of detached English sentences and of an easy English passage. Material for such translation is selected with a view to exemplifying the points of grammar included within the above limits.

Texts —(Translation and grammatical study):—

Guerber, Marchen und Erzaplungen (Heath), omitting Nos. 3, 4, 10, 14 and Poems; Baumbach, Das Habichtsfraulein (Heath).

The Ontario Junior Matriculation requirements in German will be accepted in place of the texts specified above.

At the September examination other texts equivalent to those specified may be accepted, if application be made to the Registrar at least one month before the date of the examination.

Two papers; one on prescribed texts and grammar, including translation of short English sentences into German, and one on translation of continuous passages from German into English and from English into German.

Spanish.

Grammar.—Translation from English into Spanish of short sentences involving important rules of syntax; translation from prescribed books; unseen translation from Spanish into English; Spanish composition: the translation of easy continuous prose passages from English into Spanish.

Two papers; one on prescribed texts and grammar, including translation of short English sentences into Spanish and one on translation of continuous passages from Spanish into English and from English into Spanish..

Books recommended:—Elementary Spanish grammar, Sanin Cano (Oxford Press); Spanish Composition, Loiseaux (Silver, Burdett & Company).

Prescribed books:—Novelas Cortas by Alarcon (Ginn & Company); Spanish Reader, Sanin Cano (Oxford Press).

Italian.

Grammar.—A thorough knowledge of Italian accidence and of those points of syntax which are of more frequent occurrence in an ordinary easy style.

Translation at Sight into English of an Italian passage of moderate difficulty.

Translation into Italian of detached English sentences and an easy English passage. Material for such translation is selected with a view to testing the candidate's general knowledge of Italian grammar.

Books recommended:—Grandgent's Italian Grammar (Heath); Grandgent's Italian Composition (Heath); Bowen's Italian Reader (Heath).

Two papers will be set; one on grammar, including translation of short English sentences into Italian, and one on translation of continuous passages from Italian into English and from English into Italian.

Elementary Mathematics.

Algebra.—Elementary rules, involution, evolution, fractions, indices, surds, simple and quadratic equations of one or more unknown quantities; as in Hall and Knight's Elementary Algebra, to the end of surds (omitting portions marked with an asterisk), or as in similar text-books.

One examination paper.

Geometry.—The paper shall contain questions on practical and on theoretical geometry. Every candidate shall be expected to answer questions in both branches of the subject.

The questions on practical geometry shall be set on the constructions contained in the annexed Schedule A, together with easy extensions of them. In cases where the validity of a construction is not obvious, the reasoning by which it is justified may be required. Every candidate shall provide himself with a ruler graduated in inches and tenths of an inch, and in centimetres and millimetres, a set square, a protractor, compasses and a hard pencil. All figures should be drawn accurately. Questions may be set in which use of the set square or the protractor is forbidden.

The questions on theoretical geometry shall consist of theorems contained in the annexed Schedule B together with questions upon these theorems, easy deductions from them, and arithmetical illustrations. Any proof of a proposition shall be accepted which appears to the examiners to form part of a systematic treatment of the subject; the order in which the theorems are stated in Schedule B is not imposed as the sequence of their treatment.

In the proof of theorems and deductions from them, the use of hypothetical constructions shall be permitted. Proofs which are only applicable to commensurable magnitudes shall be accepted.

SCHEDULE A.

Bisection of angles and of straight lines.

Construction of perpendiculars to straight lines.

Construction of an angle equal to a given angle.

Construction of parallels to a given straight line.

Simple cases of the construction from sufficient data of triangles and quadrilaterals.

Division of straight lines into a given number of equal parts or into parts in any given proportions.

Construction of a triangle equal in area to a given polygon.

Construction of tangents to a circle and of common tangents to two circles.

Simple cases of the construction of circles from sufficient data.

Construction of a fourth proportional to three given straight lines and a mean proportional to two given straight lines.

Construction of regular figures of 3, 4, 6 or 8 sides in or about a given circle.

Construction of a square equal in area to a given polygon.

SCHEDULE B.

If a straight line stands on another straight line, the sum of the two angles so formed is equal to two right angles; and the converse.

If two straight lines intersect, the vertically opposite angles are equal.

When a straight line cuts two other straight lines, if (i) a pair of alternate angles are equal, or (ii) a pair of corresponding angles are equal, or (iii) a pair of interior angles on the same side of the cutting line are together equal to two right angles, then the two straight lines are parallel; and the converse.

Straight lines which are parallel to the same straight line are parallel to one another.

The sum of the angles of a triangle is equal to two right angles.

If the sides of a convex polygon are produced in order, the sum of the angles so formed is equal to four right angles.

If two triangles have two sides of the one equal to two sides of the other, each to each, and also the angles contained by those sides equal, the triangles are congruent.

If two triangles have two angles of the one equal to two angles of the other, each to each, and also one side of the one equal to the corresponding side of the other, the triangles are congruent.

If two sides of a triangle are equal, the angles opposite to these sides are equal; and the converse.

If two triangles have the three sides of the one equal to the three sides of the other, each to each, the triangles are congruent.

If two right-angled triangles have their hypotenuses equal, and one side of the one equal to one side of the other, the triangles are congruent.

If two sides of a triangle are unequal, the greater side has the greater angle opposite to it; and the converse.

Of all the straight lines that can be drawn to a given straight line upon a given point outside it, the perpendicular is the shortest.

The opposite sides and angles of a parallelogram are equal, each diagonal bisects the parallelogram, and the diagonals bisect one another.

If there are three or more parallel straight lines, and the intercepts made by them on any straight line that cuts them are equal, then the corresponding intercepts on any other straight line that cuts them are also equal.

Parallelograms on the same or equal bases and of the same altitude are equal in area.

Triangles on the same or equal bases and of the same altitude are equal in area.

Equal triangles on the same or equal bases are of the same altitude.

Illustrations and explanations of the geometrical theorems corresponding to the following algebraical identities:—

$$\begin{aligned} k\,(a + b + c \ldots) &= ka + kb + kc + \ldots \\ (a + b)^2 &= a^2 + 2ab + b^2 \quad \ldots \\ (a - b)^2 &= a^2 - 2ab + b^2 \quad \ldots \\ (a^2 - b^2) &= (a + b)\,(a - b). \end{aligned}$$

The square on a side of a triangle is greater than, equal to, or less than the sum of the squares on the other two sides, according as the angle contained by those sides is obtuse, right, or acute. The difference in the cases of inequality is twice the rectangle contained by one of the two sides and the projection on it of the other.

The locus of a point which is equidistant from two fixed points is the perpendicular bisector of the straight line joining the two fixed points.

The locus of a point which is equidistant from two intersecting straight lines consists of the pair of straight lines which bisect the angles between the two given lines.

A straight line, drawn from the centre of a circle to bisect a chord which is not a diameter, is at right angles to the chord; conversely, the perpendicular to a chord from the centre bisects the chord.

There is one circle, and one only, which passes through three given points not in a straight line.

In equal circles (or in the same circle) (i) if two arcs subtend equal angles at the centres, they are equal; (ii) conversely, if two arcs are equal, they subtend equal angles at the centres.

In equal circles (or in the same circle) (i) if two chords are equal, they cut off equal arcs; (ii) conversely, if two arcs are equal, the chords of the arcs are equal.

Equal chords of a circle are equidistant from the centre; and the converse.

The tangent at any point of a circle and the radius through the point are perpendicular to one another.

If two circles touch, the point of contact lies on the straight line through the centres.

The angle which an arc of a circle subtends at the centre is double that which it subtends at any point on the remaining part of the circumference.

Angles in the same segment of a circle are equal; and, if the line joining two points subtends equal angles at two other points on the same side of it the four points lie on a circle.

The angle in a semicircle is a right angle; the angle in a segment greater than a semicircle is less than a right angle; and the angle in a segment less than a semicircle is greater than a right angle.

The opposite angles of any quadrilateral inscribed in a circle are supplementary; and the converse.

If a straight line touch a circle, and from the point of contact a chord be drawn, the angles which this chord makes with the tangent are equal to the angles in the alternate segments.

If two chords of a circle intersect either inside or outside the circle, the rectangle contained by the parts of the one is equal to the rectangle contained by the parts of the other.

If a straight line is drawn parallel to one side of a triangle, the other two sides are divided proportionally; and the converse.

If two triangles are equiangular, their corresponding sides are proportional; and the converse.

If two triangles have one angle of the one equal to one angle of the other and the sides about these equal angles are proportional, the triangles are similar.

The internal bisector of an angle of a triangle divides the opposite side internally in the ratio of the sides containing the angle, and likewise the external bisector externally.

The ratio of the areas of similar triangles is equal to the ratio of the squares on corresponding sides.

Text-books recommended:—Godfrey and Siddons' Elementary Geometry (Pitt Press, Cambridge), or Hall and Stevens' School Geometry, pp. 1-201; 219-265; 267-269; and 274-276.

An alternate paper will be set on the Ontario Junior Matriculation requirements in this subject.

One examination paper.

Advanced Mathematics.

Algebra.—The three progressions, ratio, proportion, variation, permutations and combinations, binomial theorem, logarithms, theory of quadratic equations, as in the remainder of Hall and Knight's Elementary Algebra (omitting chaps. 40 to 44 inclusive), or as in similar text-books.

One examination paper.

Geometry.

Constructions.

To draw the inscribed, escribed, and circumscribing circles of a triangle.

To construct triangles under given conditions.

To divide a given line externally and internally in medial section.

To construct an isosceles triangle, such that each of the base angles is twice the vertical angle.

To describe a regular pentagon.

To construct a polygon similar to a given polygon, and such that their areas are in a given ratio.

To construct a figure equal in area to a given figure A, and similar to another figure B.

Theorems.

If two sides of one triangle be equal respectively to two sides of another, that with the greater contained angle has the greater base; and conversely.

If a triangle is such that the square on one side is equal to the sum of the squares on the other two sides, the angle contained by these sides is a right angle.

The three medians of a triangle are concurrent.

Perpendiculars from the angles to the opposite sides of a triangle are concurrent.

The complements of parallelograms about the diagonal of any parallelogram are equal.

If the circumference of a circle be divided into n equal arcs:—

(1) The points of division are the vertices of a regular polygon of n sides inscribed in the circle.

(2) If tangents be drawn to the circle at these points, these tangents are the sides of a regular polygon of n sides circumscribed about the circle.

If $OA.OB = OC,^2$ OC is a tangent to the circle through A B C.

If two triangles have an angle in each equal, and the sides about two other angles proportional, the remaining angles are equal or supplemental.

The perpendicular from the right angle of a right-angled triangle on the hypotenuse divides the triangle into two triangles which are similar to the original triangle.

The sum of the rectangles contained by the opposite sides of a quadrilateral, about which a circle can be described, is equal to the rectangle contained by its diagonals.

The squares on two sides of a triangle are together equal to twice the square on half the third side and twice the square on the median to that side.

If from the vertical angle of a triangle a straight line be drawn perpendicular to the base, the rectangle contained by the sides of the triangle is equal to the rectangle contained by the perpendicular and the diameter of the circle described about the triangle.

If the vertical angle of a triangle be bisected by a straight line which also cuts the base, the rectangle contained by the sides of the triangle is equal to the rectangle contained by the segments of the base, together with the square on the straight line which bisects the angle.

The areas of two similar polygons are as the squares on corresponding sides.

In a right-angled triangle the rectilineal figure described on the hypotenuse is equal to the sum of the similar and similarly described figures on the other two sides.

If three lines be proportional, the first is to the third as the figure on the first is to a similar figure on the second.

If the straight lines joining a point to the vertices of a given polygon are divided (all externally or all internally) in the same ratio, the two points of division are the vertices of a similar polygon.

Two similar polygons may be so placed that the lines adjoining corresponding points are concurrent.

Triangles of equal altitude are as their bases.

In equal circles, angles, whether at the centres or circumferences, are proportional to the arcs on which they stand.

If P is any point on the circumscribing circle of a triangle, ABC, and PL, PM, PN are perpendicular to BC, CA, AB, respectively, LNM is a straight line.

A point P moves so that the ratio of its distance from two fixed points, Q and R, is constant; prove that the locus of P is a circle.

Areas.

Area of a circle.
Area of a sector of a circle.
Area of a segment of a circle.

Use of Squared Paper.

Marking points.
Finding areas of rectilinear and curvilinear figures.
Examples of plotting loci; in particular, the ellipse, hyperbola, and parabola.
Examples of loci and envelopes.

Deductions and Applications.

Deductions from and simple applications of the constructions and theorems given above.

Text-book:—Godfrey and Siddons' Elementary Geometry (Pitt Press, Cambridge), or Hall and Stevens' School Geometry, pp. 202-212, 266-269, 280-310, 319-322, and in Godfrey and Siddons, pp. 143-153 and 288-294.

An option will be set in Geometry on the work prescribed for Honour Matriculation in the Province of Ontario.

One examination paper.

Trigonometry.—Measurement of angles, trigonometrical ratios or functions of one angle, of two angles, and of a multiple angle; as in Lock's Elementary Trigonometry, Chaps. I to XII; Hall and Knight's Trigonometry, Chaps. I to XII, inclusive, omitting Chap V, or as in similar text-books.

Chemistry.

Elementary inorganic chemistry, comprising the preparation and properties of the chief non-metallic elements and their more important compounds, the laws of chemical action, combining weight, etc.

Text-book:—"Elementary Chemistry for High Schools," by Nevil Norton Evans (Educational Book Company, Limited, Toronto), Chaps. I to XVI inclusive.

One examination paper.

Physics.

Properties of matter; elementary mechanics of solids and fluids, including the laws of motion, simple machines, work, energy; fluid pressure and specific gravity; thermometry, the effects and modes of transmission of heat.

Text-book recommended:—High School Physics, by Merchant and Chant, Parts I, II, III, IV, and VI, pages 1, to 118, inclusive; 131 to 150; 214 to 274.

One examination paper.

Physical Geography.

Tarr's New Physical Geography, Chaps. I to XIV and Appendices A to H, inclusive.

One examination paper.

Botany.

The Plant Cell:—the cell-wall; the cytoplasm; the nucleus; the chloroplasts in green cells; movements of cytoplasm.

Seeds: structure; modifications which aid in dispersal; nature of the stored food; the digestion of foods by means of enzymes; germination.

Seedlings: different types; the relation of growth to temperature, light and moisture.

Roots: structure; region of growth; osmosis; the absorption of water and solutions of mineral nutrients; modifications, especially in connection with the storage of foods.

Stems: structure of the principal types; growth in length and thickness; the transfer of water and of mineral nutrients from roots to leaves; the transfer of prepared foods from leaves to other parts of a plant; the storage of food in stems; the making of maple sugar; climbing and twining stems; other modifications of stems; pruning.

Leaves: structure; photosynthesis; transpiration; adjustments to light and daily movements; modifications.

Respiration:

Buds:

Propagation by vegetative or asexual means, both natural and artificial: tubers; bulbs; stolons; runners; grafting; layering; budding.

Flowers: structure and arrangement of organs in the principal types; the functions of the different parts: self-pollination and cross-pollination; fertilization.

Fruits: structure of the principal types; modifications which assist in dispersal.

Plant Societies and special adaptations to environment:

Forests:

PART B.

A study of the principal groups of plants, emphasizing the evolution of complex from simple forms, the division of labor and the evolution of organs, the origin and evolution of sex and certain economic relations.

Bacteria : form, size, structure, motility, reproduction; relation to soil fertility; the root-nodules of the pea family and rotation of crops; relation to decay; relation to dairy products, sterilization and canning; relation to disease.

Fresh water algæ :

1. *Pleurococcus*, a unicellular green plant found growing on tree trunks, undifferentiated, without sexual reproduction, increasing by fission only.

2. *Spirogyra*, a filamentous green plant with a very simple type of sexual reproduction by means of similar germ-cells.

3. *Oedogonium*, a filamentous green plant with a higher type of sexual reproduction, by means of differentiated ova and sperms.

Higher fungi:—A black bread mold (Rhizopus); a downy mildew; the yeast plant and alcoholic fermentation; a blue mold; the corn-smut; wheat-rust; a mushroom; a wood-destroying fungus. In connection with the fungi, consideration is to be given to parasitism and saprophytism, the relations of dependent plants and their hosts; and common plant diseases and their prevention.

Lichens :

Liverworts :—structure; life-history and alternation of generations; the origin of epidermis and stomata; the progressive development of the orophyte, using Riccia, Marchantia and Anthoceros.

Mosses :—life-history and structure of a common moss, such as Polytrichum; peat-bogs and peat.

The Ferns and their Allies (Pteridophytes): structure and life-histories of a fern, an equisetum, a lycopod and a selaginella; the origin of roots and the development of a firovascular system; alternation of generations and the increasing importance of the sporophyte; Pteridophytes of past ages: coal.

Seed-plants :—

1. *Gymnosperms :*—structure and life-history of a pine; the origin of the seed-habit; pulp; timber; gymnosperms of past ages.

2. *Angiosperms :*—the structure and life-history of at least one monocotyledon, for example the trillium, and of one dicotyledon such as the bean.

A brief study of leading *agricultural and horticultural plants.*

Regional distribution : A brief consideration of the underlying principles and methods of plant-breeding.

Text-books :—"Practical Botany," by Bergen and Caldwell, to be used with "Problems in Botany," by W. E. Eikenberry, a laboratory manual for the guidance of teachers. Any other modern text-book covering similar ground may, however, be used.

One examination paper.

SENIOR MATRICULATION.

For admission to Second Year Arts (B.A. Course), or the Faculty of Law or of Medicine.

SUBJECTS OF EXAMINATION

Latin or **Greek.**
English.
Mathematics or **a third foreign language.**
Any three of the following:—

1. **History.**
2. **Latin** or **Greek** (the one not already taken.)
3. **French.**
4. **German.**
5. **Spanish.**
6. **Science** (**Physics** or **Chemistry** or **Biology.**)

Candidates intending to take the Double Course in Arts and Medicine must take two foreign languages in addition to Latin.

For admission to Second Year Arts (B.Sc. course) or the Faculty of Law or of Medicine:

1. **Chemistry.**
2. **English.**
3. **French** or **German.**
4. **Mathematics.**
5. **Physics.**

Those who choose this examination for admission to Law or Medicine must also pass in Junior Matriculation Latin.

This examination may be taken in two parts, but a candidate must complete the requirements within two years from the date of the first attempt.

Commencing with the session 1924-25 the course in Medicine will extend over five years to be preceded by two years in Arts. In the Faculty of Law two years Arts will also be required for admission.

Those who intend to practise medicine in any of the Provinces of Canada will obtain information regarding registration and admission to study by corresponding with the Registrars of the several Provincial Medical Councils. (For names, see page 226.)

The requirements for the admission of women to the Faculty of Medicine are as follows:—

(1) B.A. or B.Sc. degree from a recognized university, or (2) completion of the first two years in the Faculty of Arts at any approved university.

In either case, candidates must have satisfied the Junior Matriculation requirements in Latin.

Candidates who intend to practise law or to be admitted to the notarial profession in the Province of Quebec are referred to the statutory requirements as given in the special bulletin of the Faculty. If they are not graduates they should pass the examination for admission to study required by the Council of the Bar or by the Board of Notaries, as the case may be, before seeking to enter.

REQUIREMENTS IN EACH SUBJECT.

(For the Year 1923)

Chemistry.

Text-books:—Alex. Smith, General Chemistry; or Macpherson and Henderson, General Chemistry, as for Second Year Arts.

English.

Composition.—The examination will be designed mainly to test the candidate's ability to write English. He will be expected to have acquired a fairly clear and accurate style, to be able to arrange material in an effective fashion, and to show discrimination in the choice of words. In preparation for the examination, it is suggested that students be required to write mainly on simple, expository subjects that are within the range of their actual experience.

Carpenter's Rhetoric and English Composition (Macmillan) is recommended as a suitable text-book.

Literature.—The examination will be based on the following texts:—Chaucer's Prologue to the Canterbury Tales; Spenser's Faerie Queene, Book I, Cantos 1 and 2; Shakespeare's Macbeth and As You Like It; Milton's Minor Poems (L'Allegro, Il Penseroso, Lycidas and Comus); and Bunyan's Pilgrim's Progress, Part I.

Candidates will also be expected to read Long's English Literature (Ginn & Co.), Chapters I-VII, inclusive, with special emphasis on the portions most closely connected with the foregoing list of books.

French.

(1) *For B.A. Course.*

Vreeland & Koren, French Syntax and Composition (Holt); Super, Histoire de France (Holt); About, Roi des Montagnes (Heath); Erckmann-Chatrian, Waterloo (Heath); Merimée, Quatre Contes (Holt); Bruce, Récit et Contes de la Guerre de 1870 (Holt); Augier, Le Gendre de Monsieur Poirier (Heath).

(2) *For B.Sc. Course.*

The requirements for Junior Matriculation as on page 57, and in addition, Bowen's First Scientific French Reader (Heath).

German.

(1) *For the B.A. Course.*

Van der Smissen und Fraser, High School German Grammar (Copp, Clark Co.); Heyse, Die Blinden (Holt); Stern, Geschichten von deutschen Stadten (American Book Co.); Storm, In St. Jurgen (Holt).

(2) *For the B.Sc. Course.*

The requirements for Junior Matriculation (page 57), or the course in Beginners' German (see page 156.)

Greek.

Homer, Iliad XXII (Pitt Press Series, Camb, Univ. Press); Lysias pp. 30-92, and pp. 121-140 in Shuckburgh's Lysias, Orationes (Macmillan)

N.B.—Although the above editions are suggested others may be used.

The examination will include a paper on grammar, composition, and sight translation.

One of the following books is recommended for grammar:—First Greek Grammar, Rutherford (Macmillan); Goodwin's Greek Grammar (Ginn & Co.).

History.

Either (1) Ancient Greek and Roman History from 560 B.C. to 476 A.D.

Text-books recommended:—Bury, History of Greece (Macmillan); Pelham, Outlines of Roman History (Rivington); Stuart Jones, The Roman Empire (F. Unwin); Herodotus VII and VIII (Everyman); Plutarch, Lives of Pericles, Fabius Cunctator, Caius Gracchus, Marius, Cæsar; Gibbon, chap. I. (Everyman).

Or (2) English History from the Conquest to 1900.

Text-Books recommended:—Green's Short History; Keating and Frazer, History of England for Schools, with Documents &c. (Black); G.B. Adams, Introduction to Constitutional History of England; Seeley, Expansion of England.

Latin.

Virgil, Aeneid III (Sidgwick, Camb. Univ. Press, edition with vocabulary); and Cicero, In Catilinam I, III, IV.

The examination will include a paper on grammar, composition, and sight translation.

The grammar recommended is New Latin Grammar by Sonnenschein (Oxford Clarendon Press).

Mathematics

Plane and Solid Geometry.—The equivalent of Books IV, VI and XI of Euclid, with supplementary matter from Hall and Stevens' Euclid.

Algebra.—Hall and Knight's Elementary Algebra (omitting chapters 40-42, inclusive), or the same subject matter in similar text-books.

Trigonometry.—Hall and Knight's Elementary Trigonometry to page 210 and chapter 19; nature and use of logarithms (Bottomley's four-figure tables).

Physics.

A general knowledge of the more important principles of elementary physics will be required.

Text-book:—Kimball, College Physics (Henry Holt & Co., New York, 1912).

The student's notebook, setting forth his own laboratory work, certified by the Instructor and Headmaster of the School, must be forwarded to the Registrar for the examiner's valuation. Unless this is done, an examination on practical physics will have to be taken.

FEES.

For examination in		nine or more papers	$16.00
"	"	" from five to eight papers	10.00
"	"	" three or four papers	6.00
"	"	" one or two papers	3.00

ADMISSION TO ADVANCED STANDING.

A student of another university applying for exemption from any subject or subjects which he has already studied is required to submit with his application a Calendar of the University in which he had previously studied, together with a complete statement of the course he has followed and a certificate of the standing gained therein.

The Faculty concerned, if otherwise satisfied, will decide what examination, if any, or what other conditions may be necessary before admitting the candidate.

PHYSICAL EXAMINATION, VACCINATION AND HEALTH.

In order to promote as far as possible the physical welfare of the student body, every student, coming to the University for the first time, will be required to pass a physical examination to be conducted by, or under the direction of, the Director of the Department of Physical Education, or by a recognized representative. Students of the Second Year, as well as those of all years who wish to engage in athletic activities are also required to be physicallyexamined. The hours for this examination will be announced at registration.

By such examination physical defects and weaknesses may be discovered. If such defects and weaknesses are amenable to treatment by corrective gymnastics, special exercise will be prescribed and instruction provided. The students will be advised as to what forms of exercise will be likely to prove beneficial or harmful.

Students who do not present themselves for this examination (or otherwise satisfy the Director) before November 1st, will not be allowed to attend the University.

Re-examinations will be held frequently throughout the session for those students who are of low category, or who are suffering from physical disabilities.

All students entering the University for the first time are required to present a certificate, or other satisfactory evidence, of successful vaccination, failing which, they shall at once be vaccinated in a manner satisfactory to the medical examiner.

For regulations concerning the required physical work for men, see page 401.

For regulations concerning students of the Royal Victoria College, see pages 395 and 405.

Provision is made by the Department for the care of the health of undergraduate students during the session. Hospital accommodation is provided for seven days only, except under special circumstances. A leaflet concerning this service and the general work of the Department, together with the requirements in physical education for all students, will be distributed at the opening of the session.

AGE OF ADMISSION.

Except under special circumstances, no student under the age of sixteen is admitted to the First Year courses in Arts, Applied Science or Medicine, or under the age of seventeen to the Second Year, and no student under the age of eighteen is admitted to the course in Law.

OPENING AND CLOSING DATES OF SESSION, 1922-23.

The session 1922-23 will open in the Faculties of Arts, Applied Science, Medicine and Dentistry on Monday, October 2nd, 1922. It will end on Tuesday, May 29th, 1923.

In the Faculties of Law and Music the work of the session will be begun on September 18th.

For information regarding registration, see page 74.

CLASSES OF STUDENTS.

There are four classes of students in the University:

(1) Graduates—students who have previously obtained an ordinary degree at McGill, or elsewhere, and who are now pursuing courses for the Master's degree (in Arts, Applied Science or Law), or for the degree of Ph.D.

(2) Undergraduates—students who have passed the matriculation examination and, in the case of Second, Third and Fourth Year students, all the examinations of their course in the Years below that in which they are registered.

(3) Conditioned undergraduates—those with defective entrance qualifications or who have failed in one or more of the subjects of their course in the Year below that in which they are registered.

(4) Partial students—comprising all those who, not belonging to one of the above classes, are taking a partial course of study in the University. In order to obtain admission, such students must pass the matriculation examination in the subject, or subjects, which they wish to take, or, failing this, must be able to satisfy the Head of the Department concerned that they are qualified to proceed with the courses

REGISTRATION AND ATTENDANCE.

1. REGISTRATION.

STUDENTS IN LAW MUST REGISTER AT THE OFFICE OF THE UNIVERSITY REGISTRAR BETWEEN SEPTEMBER 11TH AND SEPTEMBER 15TH, BOTH DATES INCLUSIVE.

BETWEEN SEPTEMBER 19TH AND SEPTEMBER 29TH, BOTH DATES INCLUSIVE, STUDENTS COMING TO THE UNIVERSITY FOR THE FIRST TIME WILL REGISTER AT THE OFFICE OF THE REGISTRAR. THEY ARE REQUESTED TO REGISTER EARLY. STUDENTS PREVIOUSLY ENROLLED IN MEDICINE, DENTISTRY AND APPLIED SCIENCE MAY ALSO REGISTER BETWEEN THESE DATES AT THE REGISTRAR'S OFFICE; WHILST STUDENTS IN ARTS WILL REGISTER AT THE OFFICE OF THE DEAN.* ON SATURDAY, SEPTEMBER 30TH, ALL THOSE WHO HAD BEEN IN ATTENDANCE BEFORE WILL REGISTER AS FOLLOWS, IF THEY HAVE NOT ALREADY DONE SO: ARTS STUDENTS IN THE DEAN'S OFFICE,* APPLIED SCIENCE STUDENTS IN THE ENGINEERING BUILDING, AND MEDICAL AND DENTAL STUDENTS IN THE OFFICE OF THE UNIVERSITY REGISTRAR. LECTURES WILL COMMENCE ON MONDAY, OCTOBER 2ND. THE COMPLETE REGULATIONS REGARDING REGISTRATION ARE AS UNDER:

1. Candidates entering on a course of study in any Faculty, whether as undergraduates, conditioned undergraduates, partial students, or graduate students, are required to attend at the office of the University Registrar, or such other place as he may designate, some time during the week preceding the opening day of the session, in order to furnish the information necessary for the University records, to register for the particular classes which they wish to attend, and to sign the following declaration in the matricula or register:—

"I hereby accept and submit myself to the statutes, rules, regulations and ordinances of McGill University, and of the Faculty or Faculties in which I am registered, and to any amendments thereto which may be made while I am a student of the University, and I promise to observe the same."

2. On the day immediately before the opening of the session students who had been previously enrolled shall register for particular subjects, if they have not already done so, as follows:—Arts students in the Dean's office; Medical and Dental students at the office of the University Registrar, and Applied Science students in the Engineering Building. They may also register during the twelve preceding days at the Registrar's office, or such other place as he may designate.

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*Women students of the Faculty of Arts are also required to enter in the Roll Book of the Royal Victoria College their names, home addresses, and addresses in Montreal.

3. Students who for any reason have failed to register at the times specified above will be permitted to do so at the Registrar's Office within a limited time thereafter. In the Faculties of Law and Applied Science, students previously enrolled who do not register on the regular registration day, Friday, September 15th, or Saturday, September 30th, as the case may be, will be allowed to do so thereafter only when they have paid a fee of $5.00 to the Bursar for late registration.

4. The Registrar is empowered to register all students whose records show that they are entitled to attend the classes applied for. All doubtful cases shall be dealt with by committees as follows: in the case of candidates registering for the first time, by a committee of the Matriculation Board; in the case of all others, by a committee of the Faculty concerned.

5. The names of those who have registered for separate classes shall be sent by the Registrar to the Heads of Departments on registration day and subsequently, as new names are received, and only those for whom cards have been received by an instructor shall be given credit for attendance.

6. Students desiring to make a change in their choice of studies must make application to the Registrar to do so on a regular form. This application must be approved by the Dean of the Faculty in which he is enrolled, whereupon due notice will be sent by the Registrar to all parties concerned. No change in registration will be allowed, except under special circumstances, after the fifteenth day of the session.

7. In the Faculty of Arts, where there is a choice of courses, students in attendance shall be required to choose their electives for the next year before the close of the preceding session, or (in cases where this cannot be done) not later than one week before the opening of the session.

2. ATTENDANCE

1. Students are required to attend at least seven-eighths of the total number of lectures in any one course.* Those whose unexcused absences exceed one-eighth of the total number of lectures in a course shall not be permitted to come up for the regular examination in that course; and, in the Faculty of Applied Science, those whose unexcused absences have exceeded one-fourth of the total number of lectures in any course must repeat the work in that course.

Excuses on the ground of illness or domestic affliction shall be dealt with only by the Deans of the respective Faculties.

The following special regulation is in force in the Faculty of Applied Science:—

It is to be clearly understood that excuses for absences in excess of one-eighth will be entertained only in cases of serious illness (which must be vouched for by a proper medical certificate), domestic affliction, and

*Physical education is included under this regulation. (See page 403).

such cases as are provided for by special regulations of the Faculty. Medical certificates covering absences must be presented at the Dean's office by the student immediately after his return to University work. Such certificate will be filed, and, if acceptable, the Dean shall give the student a statement certifying to the absences covered.

2. A record shall be kept by each professor or lecturer, in which the presence or absence of students shall be carefully noted. This record shall be submitted to the Faculty when required.

3. Credit for attendance on any lecture or class may be refused on the grounds of lateness, inattention, neglect of study, or disorderly conduct in the class room or laboratory. In the case last mentioned the student may, at the discretion of the Professor, be required to leave the room. Persistence in any of the above offences against discipline shall, aftler admonition by the Professor, be reported to the Dean of the Faculty concerned. The Dean may, at his discretion, reprimand the student, or refer the matter to the Faculty at its next meeting, and may in the interval suspend from classes.

4. The following special regulation with regard to marking the attendance of students has been adopted by the Faculties of Arts and Applied Science:—

Lectures will commence at five minutes after the hour, on the conclusion of the roll call. After the commencement of a lecture students are not allowed to enter, except with the permission of the Professor. If permitted to enter, they will, on reporting themselves at the close of the lecture, be marked "late." Two lates will count as one absence. Lectures end at five minutes before the hour.

In cases where it is impracticable to record late attendance, students who are not present at the commencement of these lectures will be marked absent.

STUDENTS' EXPENSES.

1. BOARD AND RESIDENCE.

No college residences have as yet been erected for men students, but dormitory accommodation for about 60 is provided in Strathcona Hall, the home of the Student Christian Association of McGill University. Full particulars concerning terms of residence, etc., may be obtained from the Secretary of the Association, 348 Sherbrooke Street West, Montreal, who will also make arrangements to have students who are strangers to the city met on arrival and helped to secure lodgings, if due notice is sent of the station and time at which they will arrive.

Information about boarding and lodging houses may be had on application to the Secretary at Strathcona Hall. A list of suitable houses is prepared about a fortnight before the opening of the session each year. Owing to frequency of change, this list is not mailed.

Women students may board and reside either in private houses or in the Royal Victoria College, which provides, in addition to separate lecture rooms, residential accommodation for the women students of the University. The expense of board and residence for the session in the Royal Victoria College is $500. Further particulars will be furnished by the Warden.

Board and lodging can be obtained in private houses in the vicinity of the University buildings at a cost of from $60 and upwards per month; or, separately, board at $45 to $55 per month, rooms from $15 to $20 per month.

Board is furnished in the McGill Union at low rates. The dining room, which is a special feature of the Union, will accommodate over 120 students at a time. There is also a lunch counter where meals are served *à la carte*.

2. APPROXIMATE ESTIMATE OF COST OF COURSE.

(The session extends from October 1st to May 15th.)

Faculty of Arts (Men).*	Minimum	Moderate
Tuition Fees	$100	$100
Fee for Athletics, Union, etc	12	12
Board and Lodging	450	550
Books and Apparatus	25	30
	$587	$692

*For estimate of expenses for women students, see page 394.

Faculty of Applied Science.

(The session extends from October 1st to May 1st.)

	Minimum	Moderate
Tuition Fees	$205	$205
Fee for Athletics, Union, etc	12	12
Board and Lodging	450	550
Books and Instruments	40	50
	$707	$817

Students attending summer courses, required in certain years, for an additional period of one month, will have to spend from $60 to $70 extra in those particular years.

Faculty of Medicine.

(The session extends from October 1st to May 25th.)

	Minimum	Moderate
Tuition Fees	$200	$200
Fee for Athletics, Union, etc	12	12
Board and Lodging	460	560
Books, Instruments, etc	150	170
	$822	$942

Undergraduates in Arts residing in affiliated theological colleges, with a view to a course in theology, are able to obtain board and lodging for less than the minimum shown above, and in all Faculties the expense under the head of "Books and Instruments" can be reduced by purchasing these at second-hand.

It will be noticed that in the above estimate no account is taken of personal expenses, such as cost of clothes, laundry, etc., nor yet of the caution money deposit which is made by each student at the commencement of the session. This amounts to $5.00 in the Faculty of Law and $10.00 in the Faculties of Arts, Medicine and Applied Science. It might be well also to reckon on at least $20.00 to $25.00 per annum for subscriptions of various kinds.

LOAN FUNDS.

1. A fund has been established by the Applied Science Class of 1899, to be known as "The Class of 1899 Fund," for the purpose of aiding, each year, one or more students who, upon the completion of their Second Year work, require assistance to enable them to finish their course of study. The loans from this fund made to students will be repayable after graduation. Applications should be made through the Dean.

2. The George Henry Frost Fund was created by the gentleman whose name it bears for the purpose of aiding students who, when commencing the work of the Second or subsequent Years, in the Faculty of Applied Science, require assistance to enable them to complete their course. Loans from this fund will bear interest at three per cent. and will be repayable within three years after graduation. In making loans from this fund the academic standing of the students will be taken into account.

FEES.

GENERAL REGULATIONS.

1. Fees are due and payable to the Bursar as follows:—

Students in Arts (men and women), Commerce excepted	Oct.	2nd and 3rd
" " Law and Commerce	"	4th
" " Medicine	"	5th and 6th
" " Applied Science	"	9th and10th
" " Dentistry, Pharmacy, School for Graduate Nurses, Social Service and the School of Physical Education	"	11th

Students who pay by instalments will be required to pay the second instalment on or before February 1st.

The registration ticket must be shown to the Bursar at the time of the first payment.

Fees from students in all Faculties will also be accepted before Oct. 1st.

After Oct. 11th or Feb. 1st (in the case of those who pay by instalments) an additional fee of $2.00 will be exacted of all students in default.

2. Immediately after October 20th, or February 5th (in the case of students who pay by instalments), the Bursar will send to the Deans of the several Faculties a list of the registered students who have not paid their fees, on receipt of which the Dean shall cause their names to be struck from the registers of attendance, and such students cannot be re-admitted to any class except on presentation of a special ticket, signed by the Bursar, certifying to the payment of fees.

3. Students registering after October 20th shall pay their fees at the time of registration, failing which they become subject to the provisions of regulation 2.

4. No fees will be refunded to partial students under any circumstances whatever.

MATRICULATION EXAMINATION FEES.

See page 51.

FEES IN ARTS.

Sessional fee for the undergraduate course in Arts	$100.00
(This includes fee for library, gymnasium and graduation.)	
By instalments:—	
First instalment, if paid before October 10th	$51.00
Second instalment, if paid before February 1st	51.00
Sessional fee for the undergraduate course in the School of Commerce	$150.00
By instalments:—	
First instalment, if paid before October 10th	$77.00
Second instalment, if paid before February 1st	77.00

At the request of the students themselves and by the authority of Corporation, an additional fee of $12.00 will be exacted from all men undergraduates and conditioned undergraduates, for the support of the Literary Society, the Undergraduates' Society, the Canadian Club, the Union, the McGill Daily and athletics. Women students pay an additional fee of $3.00 for athletics and athletic grounds and $2.50 for the Royal Victoria College Undergraduates' Society.

Fees for Laboratory Courses.

Fees for supplies, as detailed below, will include all laboratory materials, reagents, and the use of instruments, and will cover ordinary wear and tear of instruments and apparatus, but they will not cover losses through waste, neglect, or breakage. The charges under this head will be deducted from the students' caution money at the end of the session.

General Chemistry (1)	$5.00
Organic Chemistry (2)	5.00
Analytical Chemistry (3)	10.00
Organic Chemistry, advanced (5)	15.00
Physical Chemistry, advanced (7)	10.00
Quantitative Analysis, advanced (8)	10.00
Biological Chemistry (10)	5.00
Biological Chemistry, advanced (11)	5.00
Food Chemistry Laboratory	10.00
Physics (per session)	5.00
Botany (for sessional courses)	5.00
Botany (for term courses)	2.50
Zoology (for sessional courses)	5.00
Zoology (for term courses)	2.50

Fees for Partial Students in Arts.

$4.00 for library, $3.00 for athletics and athletic grounds, and a fee at the rate of $7.00 for an hour a week of instruction during the academic year, but the maximum fee shall in no case exceed the full undergraduate fee.

Fees for Partial Students in Commerce.

$4.00 for library, $3.00 for athletics and athletic grounds, and a fee at the rate of $9.00 for an hour a week of instruction during the academic year, but the maximum fee shall in no case exceed the full undergraduate fee.

For fees payable by students taking the double course in Arts and Applied Science, see page 83; and for the fees payable by those in the double course in Arts and Medicine, see page 84.

Graduates in Arts of this University are allowed, on payment of one-half of the usual fees, to attend all lectures in the undergraduate course, except those for which a special fee is exigible. Graduates of other universities attending full courses in affiliated theological colleges are given the like privilege.

Special fees.

Supplemental examination, taken at the regular date fixed by the Faculty	$ 5.00
Each subsequent supplemental examination in the same subject	10.00
Supplemental examination, when granted at any other time than the regular date fixed by the Faculty, for each examination period	10.00

All fees for supplemental examinations must be paid to the Bursar, and the receipts shown to the Dean before the examination.

Fee for the degree of B.A. or B.Sc. (Arts) conferred in absentia (except when the candidate has been specially exempted by the Faculty)	$20.00

Caution Money.—Every student is required to deposit with the Bursar the sum of $10 00 as caution money, to cover damages done to furniture, apparatus, books, etc. This amount, less deductions (if any), will be returned at the close of the session.

FEES IN APPLIED SCIENCE

Sessional fee for the undergraduate course	$205.00
By instalments:—	
First instalment, if paid before October 10th	$105.00
Second instalment, if paid before February 1st	105.00

Students taking the summer schools in May and September are required to pay the sum of $25.00 (including Caution Money Deposit) which will be placed to their credit on the fee for the following session

At the request of the students themselves, and by authority of Corporation, an additional fee of $12.00 will be exacted from all undergraduates and conditioned undergraduates for the support of the Literary Society, the Undergraduates' Society, the Canadian Club, the Union, the McGill Daily and athletics.

Graduates of this Faculty taking an additional undergraduate course will pay one-half of the undergraduate fee.

Students taking the six-year double course in Arts and Applied Science shall pay full fees in Arts for the first three years of their course and full fees in Science for the last three years. They shall also pay special fees for extra work in the Science Faculty during their three years' course in Arts at the same rates as are charged partial students. (See below.)

The fees for partial students are:—$4.00 for library, $3.00 for athletics and athletic grounds, $1.00 for the Undergraduates' Society, and a fee at the rate of $7.00 for an hour a week of instruction during the academic year, but the maximum fee shall in no case exceed the full undergraduate fee.

Caution Money.—Every student is required to deposit with the Bursar the sum of $10.00, as caution money, to cover damage done to furniture, apparatus, books, etc. This amount, less deductions (if any), will be returned at the close of the session.

Fee for the degree of B.Sc., conferred in absentia (except when the candidate has been specially exempted by the Faculty). $ 20.00

For a regular supplemental examination, the fee is $5.00, for each subsequent supplemental examination in the same subject $10.00, for a special supplemental examination $10.00.

FEES IN MEDICINE.

Sessional fee for the undergraduate course	$200.00
By instalments:—	
First instalment, if paid before October 10th	$102.00
Second instalment, if paid before February 1st	102.00

Fee for athletics, Union, etc.*	$12.00
Caution money (deposit)†	10.00
Graduation fee for the degree of M.D., C.M‡	30.00

Double course students in Arts and Medicine, qualifying for the degree B.A. or B.Sc. and M.D., shall pay full fees in Arts for two years and in Medicine for six. They shall also pay $30.00 as a graduation fee in the Faculty of Arts, as well as in Medicine.

Sessional fee for students repeating a session	$100.00

Repeating students must also pay $12.00 for athletics, etc., and make the usual caution money deposit of $10.00.

Fee for students from other colleges who have paid full fees there for the courses to be taken	$100.00

These students are also required to pay, in addition, $12.00 for athletics, etc.,* the hospital fees exacted in the year to which they are admitted, and to make the usual caution money deposit of $10.00.

An *ad eundem* fee of $10.00 will be charged students entering from another university in any year above the first.

Partial students will be admitted on payment of special fees..

Fee for a supplemental examination	$ 5.00
Fee for the course in Public Health and diploma	100.00

FEES IN DENTISTRY.

Students in Dentistry pay the following fees:—

Sessional fee	$200.00

By instalments:—

First instalment, if paid on or before October 10th	$102.00
Second instalment, if paid on or before February 1st	102.00
Fee for athletics, the Union, etc.*	12.00
Caution money deposit†	10.00
Graduation fee for the degree of D.D.S.‡	30.00

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*At the request of the students themselves and by authority of Corporation, this additional fee of $12.00 is exacted from all men undergraduates and conditioned undergraduates for the support of the Literary Society, the Undergraduates' Society, the Canadian Club, the Union, the McGill Daily, and athletics.

†The caution money deposit is intended to cover breakages in the different laboratories, etc. The amount of the deposit, less deductions (if any), will be returned at the close of the session.

‡When the degree is conferred in absentia an additional fee of twenty dollars will be exacted, unless the candidate has been specially exempted by the Faculty.

FEES IN PHARMACY.

Registration fee	$ 5.00
Fee for athletics and athletic grounds	3.00
Course in Junior Chemistry and Physics	50.00
Course in Senior Chemistry	50.00
Course in Junior Materia Medica and Pharmacy	50.00
Course in Senior Materia Medica and Pharmacy	50.00
Course in Practical Pharmacy	50.00
Course in Analytical Chemistry	50.00
Course in Botany	25.00
Graduate Diploma	15.00
Supplemental Examination, each subject	5.00

Certain fees are payable to the Pharmaceutical Association of the Province of Quebec for registration, examinations, and for the Licentiate in Pharmacy (see announcement of Department of Pharmacy).

The fee of $12.00 for the Union McGill Daily, etc., etc., is optional for students in Pharmacy, but they are required to pay the athletics and athletic grounds fee of three dollars.

The sum of $5.00 is collected from all students of Pharmacy at the time of registration as "caution money," to cover breakages in the laboratories or lecture rooms. The balance will be refunded at the end of the session.

The University supplies all reagents and apparatus in the various laboratories. Charge is made for breakages only.

Partial students will be admitted to one or more courses on payment of special fees.

FEES IN LAW.

Sessional fee	$150.00
By instalments:—	
First instalment, if paid on or before October 10th	$ 77.00
Second instalment, if paid on or before February 1st	77.00
Fee for athletics, the Union, etc.*	10.00
Graduation fee‡	12.50
Fee for a Regular Supplemental Examination	5.00

*See foot note on preceding page.
†See foot note on preceding page.
‡See foot note on preceding page.

Fees for partial students in Law:—

$3.00 for athletics and athletic grounds, and a fee at the rate of $7.00 per point, i.e. for an hour a week of instruction during one half session, but the maximum fee shall in no case exceed the full undergraduate fee.

Caution Money.—Every student is required to deposit with the Bursar the sum of $5.00, as caution money, to cover damage done to furniture, loss of books, etc. This amount, less deductions (if any), will be returned at the close of the session.

FEES IN THE GRADUATE SCHOOL.

For the course leading to the degree of M.A., M.Sc. or LL.M....	$40.00
For each year of the course leading to the degree of Ph.D.....	40.00
Graduation fee for M.A., M.Sc., M.S.A., or LL.M.....	20.00
" " " (*In absentia*)	40.00
" " Ph.D.....	30.00
Fee for the degree of D.Sc.....	80.00
" " D.Litt.....	80.00
" " D.C.L.....	80.00

The examination and graduation fee is payable when the candidate presents himself for examination and is not returnable if he is unsuccessful. No thesis can be accepted unless it is accompanied by a receipt from the Bursar for this fee. If, however, a candidate for the degree of M.A. or M.Sc. fails, he may present himself in a subsequent year without further payment of fees. A candidate for the degree of Ph.D. D.Sc. or D.Litt., in case of failure may present himself in a subsequent year upon payment of an additional sum amounting to one-half of the usual fee for this degree.

Lecturers, tutors and demonstrators in the University who are proceeding to the degree of Master of Arts, Master of Science, or Doctor of Philosophy, shall, so long as they remain members of the teaching staff, be exempt from the tuition fee, but will be required to pay the fee for graduation in every case. In the event of their leaving the staff after one year of the course, they are required to pay a tuition fee of $20.00 in the M.A. or M.Sc. course and the prescribed fee in the Ph.D. course.

No fee shall be charged for the degree of LL.D., granted *honoris causa*.

FEES IN MUSIC.

Regular students, per session	$175.00
By instalments:—	
First instalment, if paid on or before October 10th	$ 89.00
Second instalment, if paid on or before February 1st	89.00
(This sum will also cover the fees for the diploma or degree examination at the end of each year.)	
Senior partial students, per term of 11 weeks	40.00
Junior partial students, per term of 11 weeks	33.00
Examination and graduation fees for Mus. Bac., when the course is taken extra-murally; for each examination (first, second or third)	20.00
For the diploma	20.00
Examination and graduation fee for Mus. Doc	100.00
Athletics fee for undergraduates	3.00

The fee for the degree of Mus. Doc. is payable in two instalments. Fifty dollars must be paid when the candidate submits his exercise. If the exercise is not approved, he may in a subsequent year submit another exercise upon payment of $25.00. The second instalment of $50.00 must be paid before the subsequent examination. If the candidate be unsuccessful, he may in a subsequent year present himself again for examination upon payment of $25.00.

Information regarding fees to be paid by students for class work and by occasional students, as well as regarding fee for certificates and examinations, when these are not covered by the regular fee, will be found in the special syllabus issued by the Conservatorium of Music.

FEES IN THE SOCIAL SERVICE DEPARTMENT.

For Diploma students	$ 70.00
By instalments:—	
First instalment, if paid on or before October 10th	$ 36.00
Second instalment, if paid on or before February 1st	36.00
Partial students:—	
For a single sessional course	$ 7.50
For a single term course	5.00
For course No. 7	10.00
For the Extension Course	5.00

FEES IN THE DEPARTMENT OF PHYSICAL EDUCATION.

Gymnasium for partial students (optional)	$ 5.00
Fee for supplemental course in September	10.00

IN THE SCHOOL OF PHYSICAL EDUCATION.

Sessional fee	$150.00
By instalments:—	
First instalment, if paid on or before October 10th	$ 77.00
Second instalment, if paid on or before February 1st	77.00
Fee for athletics, and athletic grounds	3.00
Caution money deposit	5.00

FEES IN THE SCHOOL FOR GRADUATE NURSES.

Sessional fee for either certificate course	$100.00
By instalments:—	
First instalment, if paid on or before October 10th	$ 51.00
Second instalment, if paid on or before February 1st	$ 51.00
For partial students the fee is $7.50 for a full course of one lecture a week during the winter; $5.00 for a half-term course, $10.00 for a double course (two lectures weekly).	
Fee for athletics, and athletic grounds	3.00
Caution money deposit	5.00

MISCELLANEOUS FEES.

Certificate of standing (general)	$ 1.00
Certificate of standing, accompanied by a statement of classification in the several subjects of examination	2.00

All applications for certificates must be addressed to the Registrar of the University, accompanied by the required fee.

No certificates are given for attendance on lectures unless the corresponding examinations have been passed.

SCHOLARSHIPS, FELLOWSHIPS, MEDALS AND PRIZES.

1. SCHOLARSHIPS AND FELLOWSHIPS FOR GRADUATES.

1. The McGill Delta Upsilon Memorial Scholarship.—This scholarship has been founded by the McGill Chapter of the Delta Upsilon Fraternity to perpetuate the memory of the members of that Chapter who gave their lives in the Great War.

It is open to all graduates of the University, and the following considerations will govern the award:—(a) The general scholarship of the candidate; (b) His need of financial assistance for further study; (c) The general usefulness to the community of the special branch of study he proposes to follow; (d) The likelihood that the candidate will reflect credit on the University.

The present value of the scholarship is about $750.

2. The Allen Oliver Scholarship (in Economics and Political Science).

This scholarship has been established by Mrs. Frank Oliver, of Edmonton, Alta., in "proud and loving memory of her son, the late Allen Oliver, B.A.,* M.C., Lieutenant 26th Battery, C.F.A., who was killed in action at the Somme on November 18th, 1916." The scholarship will be awarded annually to the student who stands highest in First Class Honours in the Department of Economics and Political Science at the final B.A. examination, and the holder is required to pursue his studies in Economics and Political Science in some university outside of Canada. The present value of the scholarship is about $650.

3. The LeRoy Memorial Fellowship in Geology.—This fellowship was established by some friends of Captain O. E. LeRoy (Arts 1895), who was killed in the Battle of Passchendaele, in October, 1917. It will be annually awarded to a worthy student who desires to proceed to post-graduate studies in Geology at McGill University. The recipient of this award may be called upon to assist in the teaching work of the Department. This Fellowship is awarded by the Head of the Department of Geology and Mineralogy in consultation with the Principal. It is of the annual value of $700.

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*Lieut. Oliver was an Honour graduate of 1915 in the Department of Economics and Political Science.

4. The Sir William Macdonald Scholarship in Law.—A travelling scholarship has been established by the will of the late Sir William Macdonald, "for the purpose of enabling English-speaking Law students to take a course of studies in France," the donor "deeming it of great importance that the English-speaking members of the legal profession should be proficient in the French language."

The value of this scholarship is the income derived from the sum of $20,000.

5. The A. A. Browne Memorial Fellowship.—From the proceeds of the sum of $10,000, which was received by the Faculty from the committee of the A. A. Browne Memorial Fund, a fellowship has been established, known as the "A. A. Browne Memorial Fellowship." This fellowship is open to graduates of any recognized Medical School and is for the advancement of medical science, special preference being given to the subjects of obstetrics and gynæcology.

6. The James Douglas Research Fellowship.—This fellowship, founded by the late Dr. James Douglas, with an endowment of $25,000, is awarded to promote co-ordinated research in the laboratories of pathology in or associated with the University.

7. The Dr. T. Sterry Hunt Research Scholarship in Chemistry. —It is proposed to offer this scholarship each year to graduate students in the Faculties of Arts and Applied Science.

8. Post Graduate Scholarships Granted by the Imperial Order of the Daughters of the Empire.—Nine are offered annually —one for each Province. They are of the value of $1,400.00, are tenable for one year and have been founded "to enable students to carry on studies at any university in the United Kingdom, in British and imperial history, the economics and government of the Empire and Dominion, or any subject vital to the interests of the Empire."

Full details may be obtained from the Secretary of the National Chapter of Canada, 238 Bloor Street East, Toronto, Ont.

II. SCHOLARSHIPS, EXHIBITIONS AND PRIZES—GENERAL.

1. The Rhodes Scholarship.—This scholarship is of the annual value of £300 sterling and is tenable at the University of Oxford for three years. The scholar must be a British subject, must be over 19 and under 25 years of age, and must have reached at least the end of his Sophomoreor Second Year in the University.

Rhodes Scholarships have been awarded to McGill students or graduates as follows:—1904, Herbert J. Rose, B.A., and John G. Archibald, B.A.; 1905, Talbot M. Papineau, B.A.; 1906, Alexander R. McLeod, B.A.;

1908, Frank E. Hawkins, B.A.; 1911, Walter J. Pearse; 1913, W. E. Gladstone Murray, B.A.; 1915, Percy E. Corbett, M.A.; 1919, Terence William Leighton MacDermot, B.A.

Beginning with 1920 the old method of selection by the Universities of the Province in a certain order of rotation was discontinued, and scholars are now chosen by a general committee and the competition is open to candidates from the whole Province without any regard to Universities at all.

Under the new arrangement, the following McGill men have been selected:—John Farthing, (B.A. 1921); Lawrence Henry Armstrong (B.Sc. 1922).

2. Science Scholarships granted by Her Majesty's Commissioners for the Exhibition of 1851.—These scholarships, of the value of £200 sterling a year, are tenable for two, or, in rare instances, three years. They are limited, according to the Report of the Commission, "to those branches of science, such as physics, mechanics and chemistry, the extension of which is especially important for our national industries." Their object is not to facilitate ordinary collegiate studies," but to enable students to continue the prosecution of science with the view of aiding in its advance or in its application to the industries of the country."

They are open to students of not less than three years' standing who have shown evidence of capacity for original research, and are tenable at any university or other institution approved by the Commission.

Three of these Scholarships are allotted to Canada each year, the scholars being chosen by the Commission from the nominees of a certain number of Universities, among which McGill is included. The change in the method of selection was made in 1922.

This Scholarship has been awarded as follows:—

Evans, P. N., 1891; Macphail, J. A., 1892; King, R. O., 1895; Gill, J. L. W., 1897; McLean, W. B., 1899; McClung, R. K., 1901; Cooke, H. Lester, 1903; Johnson, F. M. G., 1905; Simpson, J. C., 1907; Boyle, R. W., 1909; Shaw, A. Norman, 1911; Meldrum, W. Buell, 1912; Maass, Otto, 1913; Warneford, Frank H. S., 1915; Russell, John, 1919; Bieler, Etienne S., 1920; Saunders, Leslie Gale, B.S.A., 1921.

3. The P. S. Ross Exhibition of $100.00, founded by Mr. P. D. Ross, B.A.Sc., in memory of his late father, Mr. P. S. Ross, and given through the Ottawa Valley Graduates' Society, will be awarded annually to the candidate from the Ottawa Valley for entrance to any Faculty, who obtains the highest percentage at the June matriculation examination, and attends the University during the ensuing session. Candidates must apply before July 1st.

4. The Ottawa Valley Graduates' Society's Exhibition, value $100. This exhibition will be awarded annually to the candidate from

the Ottawa Valley for entrance to any Faculty who obtains the second highest percentage at the June matriculation examination and attends the University during the ensuing session. Applications must be made before July 1st.

5. The Sidney J. Hodgson Exhibitions, founded by his father, Arthur J. Hodgson, Esq., in memory of his late son, Sidney James Hodgson, a student of the First Year in Arts, who was killed in action on September 27th, 1918, while serving in the 66th Battery of the Canadian Field Artillery One of these exhibitions is of the value of $125, tenable in the Faculty of Arts, and another of the value of $300, tenable in the Faculty of Applied Science or of Medicine. They are open to pupils of the Westmount High School who have been in attendance for at least one year, and will be awarded on the result of the June matriculation examination to the two pupils who obtain the highest percentage on the subjects required for entrance to the Faculty of Arts, Applied Science or Medicine, as the case may be , and who attend the University during the ensuing session, provided however, that they have not been awarded another exhibition of higher value.

6. The Chester Macnaghten Prize of the value of $25.00 in books, established by the late Russell E. Macnaghten, Esq., M.A., in memory of his late uncle, will be awarded annually, through the University Literary and Debating Society, for reading in English.

7. Bursaries Granted by the Imperial Order of the Daughters of the Empire.—These bursaries are of the annual value of $250.00, are tenable for four years at any university and are open to the sons and daughters of deceased and permanently disabled soldiers and sailors. One is available for each Province each year.

Full information can be obtained by writing to the Head Office of the Order for Canada, 238 Bloor Street East, Toronto, Ont.

III. SCHOLARSHIPS IN ARTS.

GENERAL REGULATIONS.

1. No student can hold more than one scholarship at the same time.

2. Scholarships will not necessarily be awarded to the candidates who have obtained the highest marks. An adequate standard of merit will be required.

3. If in any college year there be not a sufficient number of candidates showing adequate merit, any one or more of the scholarships offered for competition may be given to more deserving candidates in another year.

4. A successful candidate must, in order to retain his scholarship, proceed regularly with his college course to the satisfaction of the Faculty.

5. The annual income of the scholarships will be paid in four instalments, viz:—In October, December, February and April, about the 20th of each month.

ENTRANCE SCHOLARSHIPS IN ARTS.

Scholarship Granted by the Graduates' Society of the District of Bedford.

This scholarship, of the value of $120, will be awarded annually to a "matriculated student in Arts whose parents reside in the District of Bedford, and whose candidature has been approved by a committee of the Society."

Narcissa Farrand (Mrs. N. Pettes) Scholarship.

This scholarship, of the value of $300 ($150 for two years), founded by Mr. and Mrs. H. V. Truell, of Sweet Acre, Knowlton, Que., and endowed by them with the sum of $7,000 out of the Narcissa Farrand Fund, will be awarded annually to the candidate from the Eastern Townships who obtains the highest marks at the Arts matriculation examination in June, and who has had his domicile in the Eastern Townships for five consecutive years immediately preceding the examination. Intending competitors must apply to the Registrar before July 1st each year.

The Trafalgar Scholarship.

This scholarship was founded in 1913 by certain friends and former pupils of Miss Grace Fairley, to signalize her long and faithful service to education in Montreal, and particularly as head of the Trafalgar Institute. It is of the value of $135, is tenable for one year only, and will be awarded annually to the student of Trafalgar Institute who obtains the highest marks in the June matriculation examination and matriculates as an undergraduate in the Faculty of Arts.

Scholarship for Holders of Intermediate Diplomas.

A scholarship of $150 is offered annually in the Faculty of Arts to holders of Intermediate diplomas obtained after a course of study in Macdonald College, under the following conditions :—

(1) Candidates must apply through the Dean of the School for Teachers before May 1st.

(2) They must satisfy the entrance requirements of the Faculty of Arts and declare their intention to proceed to a First Class High School diploma following the course prescribed by the University.

The scholarship will be awarded on the academic subjects of the examination for the Intermediate diploma; but although the practice marks will not be taken into account directly, the opinion of the Macdonald College staff as to the general fitness of the applicant for a University course will be considered. In case there is no applicant from the graduating class in any year, applications from graduates of previous years will be considered on their merits.

Holders of this scholarship will be permitted to count practice teaching and post-graduate work towards the fulfilment of their agreement to teach for a period of three years in the Province of Quebec.

The Sir William Macdonald Entrance Scholarships.

The following scholarships, endowed by the late Sir William Macdonald and open to men only, will be offered for competition in June each year:—

Five scholarships, of the value of $150.00 each (three open only to candidates not residing on the Island of Montreal), will be awarded on the result of the matriculation examination in June.

Application must be made before July 1st.

University Entrance Scholarships.

Three scholarships of the value of $100 each and two of the value of $75 each (one of each value open only to candidates not residing on Montreal Island) will be awarded on the result of the matriculation examination in June.

Application must be made before July 1st.

Royal Victoria College Entrance Scholarships.

Two scholarships, open to women only and conditional on residence in the Royal Victoria College, are offered each year, one of the value of $200 and one of $100. The matriculation standing of the applicants will be taken into account in making the award.

The Hon. Robert Jones' Scholarship.

THE HON. ROBERT JONES' SCHOLARSHIP, having a value of One Hundred and Twenty-five Dollars ($125.00) per annum, "is granted from time to time to some poor student for the full term of study in the Faculty of Arts."

Application for this scholarship should be made through the Dean of the Faculty of Arts. In awarding the scholarship the standing of the student in the matriculation examination will be considered, and the scholarship will not be continued if the standing of the student at any time during his course proves to be unsatisfactory.

SCHOLARSHIPS IN ARTS AWARDED ON THE RESULT OF THE SESSIONAL EXAMINATIONS.

THE JANE REDPATH SCHOLARSHIP.—Founded by the late Mrs. Redpath, of Terrace Bank, Montreal, for the maintenance of a scholarship in Arts. It will be awarded on the result of the sessional examination of the First Year to the student who makes the highest average on the year's work. Value of scholarship, $115.00.

THE BARBARA SCOTT SCHOLARSHIP.—Founded by the will of the late Barbara Scott to form an annual scholarship for the student "excelling in classics in the First Year." Value, $115.00.

THE JAMES DARLING MCCALL SCHOLARSHIP.—This scholarship was founded by J. T. McCall, Esq., in memory of his son, James D. McCall, B.Sc., who was drowned shortly after the close of the war, in which he had served with distinction. This scholarship will be awarded each year to a male student of the Third Year Arts who has "given proof of scholarship and ability as an honour student in the subjects of English and Philosophy." It is of the value of $275.00.

THE CHARLES WILLIAM SNYDER MEMORIAL SCHOLARSHIP.—This scholarship has been founded by L. P. Snyder, Esq., in memory of his son, Charles William Snyder, a student of the First Year Arts, who was killed in the Battle of Sanctuary Wood on June 2nd, 1916. It is of the value of $250.00 and will be awarded annually on the result of the examination in English and Economics of the Second Year, and is subject to the condition that the holder take an honour course in English, with Economics as a minor subject, in his Third Year, or the Honour Course in English and Economics, should such be established. It is open to male students in the Faculty of Arts professing the Christian religion.

MACKENZIE SCHOLARSHIPS.—Four scholarships, known as the Mackenzie Scholarships, are awarded annually in the Department of Economics and Political Science. Two of these, of the value respectively of $100 and $50, tenable for one year, are awarded on the result of the Second Year examination in political economy (Economics, Course 1), but no student is eligible who has not completed the work of this year. The tenure of the scholarships is conditional upon the holders pursuing their studies in the honour work in economics and political science of the Third Year. The other two scholarships, of the value respectively of $100 and $50, are

awarded on the results of the honour examination of the Third Year in economics and political science. The scholarships will not be awarded except on satisfactory evidence of merit; their tenure is conditional upon the holders pursuing their studies in the honour work in economics and political science of the Fourth Year.

A Fourth Year Mackenzie scholarship may be held by a student who holds another; a Third Year scholarship cannot.

THE SIR WILLIAM DAWSON SCHOLARSHIP.—Given by the New York Graduates' Society—value, $60.00.

THE HOUSTON SCHOLARSHIP.—Founded by the will of the late Thomas Houston, for the purpose of establishing a scholarship for French students studying for the Presbyterian ministry. It is open only to undergraduates in the Faculty of Arts under the above restriction and will be awarded on the result of the sessional examination without regard to year. The value of the scholarship is about $60.00.

PRESBYTERIAN COLLEGE SCHOLARSHIPS.—The Board of Management of the Presbyterian College offers a number of scholarships for the payment of fees of undergraduates in Arts who are registered at the Presbyterian College as in training for the study of theology with a view to the ministry and who have creditably passed the sessional examinations. For further information, application should be made to the Registrar, the Presbyterian College, Montreal.

SCHOLARSHIPS IN ARTS AWARDED ON THE RESULT OF A SPECIAL EXAMINATION IN SEPTEMBER.

Second Year Scholarships in Arts.*

Six scholarships, ranging in value from $100 to $150 each, will be offered for competition to students entering the Second Year in September, 1922.

The subjects of examination are divided into two groups as follows:—

Group I.—Greek, Latin, French, German, English.

Group II.—Mathematics, Physics.

Candidates are required to offer two major subjects and one minor subject. The two major subjects must be selected from the same group, the minor subject from either group, the examination in the major subject being more extensive than that in the same subject presented as a minor subject. Two scholarships of $150 each and two of $100 each are offered to candidates taking their major subjects from Group I, and one of $150 and one of $100 to candidates taking their major subjects from Group II.

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*Second year scholarships are open to students who have passed the First Year sessional examinations, provided that not more than two sessions have elapsed since their admission to the University.

One of these scholarships is "The Charles Alexander Scholarship," for men only, and is awarded for "classics and other subjects."

The above scholarships are open to all undergraduates in Arts, whether they are taking the B.A. or the B.Sc. course.

The requirements in each subject are published in a separate pamphlet, which can be obtained at the Registrar's Office.

Applications for these Scholarships must be sent to the Registrar before July 1st.

Third Year Scholarships in Arts.†

The following five scholarships, of the value of $300 $150. per year for two years), will be open for competition to students entering the Third Year in September, 1922.

One for English and another language.

One for Latin or Greek and another language‡ (English excepted).

One for French or German and another language‡ (Engliso excepted).

Two for Mathematics and Physics.

Of the above five scholarships, two are known as "Sir William Macdonald Scholarships" and are open to men only.

In addition to the above, the three following scholarships, of the value of $150.00 each, are also offered for competition to students entiring the Third Year:—

One for Philosophy and Psychology.

One for Chemistry and Physics.

Of the above two scholarships, one is called a "Sir William Macdonald Scholarship" and is open to men only.

One for Biology.

This scholarship shall be called "The Major Hiram Mills Scholarship." It is open to both men and women.

A bursary of $25 will be awarded to that one of the holders of these three scholarships who is considered most deserving on entering the Fourth Year.

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†Third Year Scholarships are open to students who have passed the Second Year sessional examination, provided that not more than three sessions have elapsed since their admission to the University; and also to candidates who have obtained what the Faculty may deem equivalent standing in some other university, provided that application be made before the end of the session preceding the examination. Double course students (Arts and Applied Science or Arts and Medicine) are not eligible for these scholarships.

‡The language not chosen in the first instance may be taken as the second language.

An exhibition of $80, to be known as the Hannah Willard Lyman Exhibition, will also be awarded annually in the Fourth Year, to the best woman student who may have been the holder of a Third Year scholarship in biology or chemistry or philosophy. Should there be no sufficiently deserving candidate, this exhibition may be awarded at the beginning of the Third Year to a woman candidate who may fail to obtain one of the five regular scholarships offered to Third Year students.

In the award of Third Year scholarships, the Second Year standing of candidates, in the subjects selected, will be taken into account.

In the event of no candidate of sufficient merit presenting himself, the scholarship assigned to any group of subjects may, at the discretion of the Faculty, be awarded in another group, whether a scholarship has been already assigned to that group or not.

Details of the requirements for these scholarships are given in a separate pamphlet, which can be obtained at the Registrar's Office.

Applications for these scholarships must be sent to the Registrar before July 1st.

IV. MEDALS IN ARTS.

Gold Medals will be awarded in the Final Honour examinations to students who take the highest honours of the first rank in the subjects stated below, and who shall have passed creditably the ordinary examination for the degree of B.A. or B.Sc., provided they have been recommended therefor to the Corporation by the Faculty, on the report of the examiners:

The Henry Chapman Gold Medal, for Classical Languages and Literature.

The Prince of Wales Gold Medal, for Mental and Moral Philosophy.

The Anne Molson Gold Medal, for Mathematics and Natural Philosophy.

The Shakespeare Gold Medal, for English Language and Literature.

The Logan Gold Medal, for Geology, Mineralogy and Palæontology.

The Major Hiram Mills Gold Medal, for Biology.

The Governor-General's Gold Medal, for Modern Languages and Literature.

The Allen Oliver Gold Medal, for Economics and Political Science (founded by Mrs. Frank Oliver, in memory of her late son, Allen Oliver, B.A.. M.C., Lieutenant 26th Battery, C.F.A., who was killed in action at the Somme, on November, 18th, 1916).

In addition to the above, certain medals are offered annually by the Alliance Française, at the discretion of the Department of Modern Languages.

If there be no candidate for any medal, or if none of the candidates fulfill the required conditions, the medal will be withheld, and the proceeds of its endowment for the year may be devoted to prizes in the subject for which it was intended.

V. PRIZES IN ARTS.

1. The Neil Stewart Hebrew Prize.—An annual prize of $15 is open to all undergraduates and graduates of this University, and also to graduates of any other university, who are students of theology in some college affiliated to this University. It will be awarded on the result of the sessional examination in Hebrew of the Second Year.

The prize, founded by the late Rev. C. C. Stewart, M.A., and terminated by his death, was re-established by the liberality of the late Neil Stewart, Esq., of Vankleek Hill.

2. Early English Text Society's Prize.—This prize, the annual gift of the Early English Text Society, will be awarded for proficiency in the subjects of the language group in the English honour curriculum of the Third and Fourth Years.

3. New Shakespeare Society's Prize. This prize the annual gift of the New Shakespeare Society, open to graduates and undergraduates, will be awarded for a critical knowledge of the following plays of Shakespeare:—Hamlet, Macbeth, Othello, King Lear.

4. Charles G. Coster Memorial Prize.—This prize, of the value of $25.00, and intended as a tribute to the memory of the late Rev. Chas. G. Coster, M.A., Ph.D., Principal of the Grammar School, St. John, N.B., is offered for competition by Mr. Colin H. Livingstone, B.A., to undergraduates (men and women) from the Maritime Provinces (Nova Scotia, New Brunswick and Prince Edward Island). It is awarded on the decision of the Dean of the Faculty of Arts to that student in Arts from the Maritime Provinces who shows the greatest proficiency in the examinations at the end of the session.

5. Annie Macintosh Prize.—The income of the sum of $1,130 ($425 of which was subscribed by the pupils and friends of the late Miss Annie Macintosh, and $618.97 bequeathed by the late Miss I. G. Macintosh) will be offered as a prize or prizes to students of the Royal Victoria College in such subject or for such work as the Faculty may determine.

6. Penhallow Prize.—The income of the sum of $1,100, collected by the Arts Undergraduates Society in 1911, will be assigned annually to the Department of Botany for a prize to be known as the "Penhallow" prize.

7. Henry Chapman Prize.—This prize, of the value of $15.00, is given in such modern languages as may be taught in the Faculty of Arts, other than English, and Hebrew shall also be included.

8. One Sir William Dawson Exhibition, given by the New York Graduates' Society value, $60.00.

9. The names of those who have taken honours or certificates will be published in order of merit.

VI. SCHOLARSHIPS, EXHIBITIONS AND PRIZES IN APPLIED SCIENCE.

I.—Awarded on the result of Special Examinations.

1. Two prizes, each of $10.00, presented by J. M. McCarthy, Esq., B.A.Sc., to students entering the Third Year, for proficiency in levelling and transit work.

2. Messrs. Babcock & Wilcox, Limited, offer every second year, a scholarship of the value of $200.00 per annum, tenable for two years, to the best all-round man among the Engineering students who, having completed the work of the First and Second Years, is about to enter the Third Year, and who intends to make special study of the subject of Steam Engineering. The conditions under which this scholarship is awarded may be ascertained on application to the Dean of the Faculty.

3. Scholarships covering four years' tuition in the Faculty of Applied Science are awarded annually by the Canadian Pacific Railway Company. These are open for competition to apprentices and other employees of the Company under twenty-one years of age, as well as to minor sons of employees, and the award is made on the result of the June Matriculation Examination. For full particulars as to number of scholarships available, etc., application should be made to C. H. Buell, Esq., Staff Registrar and Secretary, Pension Department, C.P.R. Offices, Montreal.

4. The P. S. Ross, Ottawa Valley, and Sidney J. Hodgson Entrance Scholarships. For particulars, see pages 91 and 92.

II.—Awarded on results of Sessional Examinations or for special theses.

1. A British Association exhibition of $50.00 and a prize of $25.00 at the end of the Third Year, to the students who obtain the highest and the second highest aggregate marks, respectively, in the sessional examinations in strength of materials and mechanics of the Third Year.

2. Three prizes of $25.00, $15.00 and $10.00, at the end of the Second Year, to the students obtaining the highest, and the second and third highest, aggregate marks, respectively, in the sessional examinations in analytic geometry, calculus and mechanics of the Second Year.

3. A Scott exhibition of $50.00, founded by the Caledonian Society of Montreal, in commemoration of the centenary of Sir Walter Scott, and two prizes of $25.00 and $15.00, at the end of the First Year, to the students obtaining the highest, and the second and third highest aggregate marks, respectively, in the sessional examinations in the mathematics, descriptive geometry and physics of the First Year.

4. Workshop Prize.—A prize of $20.00 presented by Mr. C. J. Fleet, B.A., B.C.L., for bench and lathe work in the wood-working department, open to students of not more than two terms' standing in workshop practice.

5. A prize of $50.00, presented by Mr. James Tighe, B.A.Sc., for research work in hydraulics.

6. An exhibition offered to graduates by Mr. A. E. Childs, M.Sc., for a special research on "The flow of gas through pipes under pressure."

7. A prize of $25.00, presented by Anglin, Norcross, Ltd., to the student obtaining the highest aggregate marks in the subject of architectural drawing in the Second Year of the Department of Architecture.

8. A prize of $25.00, presented by Messrs. Anglin, Norcross, Ltd., to the student obtaining the highest aggregate marks in Construction (Courses Nos. 24-31 inclusive) in the Second, Third and Fourth Years in the Department of Architecture.

9. The Louis Robertson Prize, founded by Mr. and Mrs. John A. Robertson, in memory of their son, John Louis Armour Robertson, who was killed in the Great War, on July 18th, 1916. To be awarded to the undergraduate student who ranks highest in Design in the final year of the course in Architecture.

10. The following prizes are offered for the best summer essays:—

To the students in the Civil Engineering Course a prize of $25.00, from a friend.

To the students in the Electrical Engineering course, from a friend, a prize of $25.00.

To the students in the Metallurgical Engineering course, a prize of $25.00, presented by Milton L. Hersey, Esq., D.Sc.

To the students in the Mechanical Engineering course, a prize of $25.00, presented by the Crosby Steam Gauge & Valve Co.

To the students in the Mining Engineering course, a prize of $25.00, presented by J. T. McCall, Esq.

11. There are available each year, five student prizes of twenty-five dollars each, for the best paper in each of the branches of engineering—civil, mechanical, electrical, mining and chemical—received from a student member of the Institute. The successful papers become part of the literature of the Institute and place the authors in prominent touch with the engineering profession. Further particulars from Fraser S. Keith, Secretary, 176 Mansfield Street, Montreal.

12. Three prizes, one of $25.00 and the President's gold medal, one of $15.00 and one of $10.00, are offered annually for the best papers submitted to the Canadian Institute of Mining and Metallurgy by student members of the Institute.

13. The sum of $50.00 has been voted by the Undergraduates' Society of the Faculty of Applied Science, to be given as prizes for the best papers read before the Society during the session 1922-23.

14. One Sir William Dawson Exhibition, given by the New York Graduates' Society:—value, $60.00.

15. Certificates of merit are given to such students as take the highest place in the sessional and degree examinations.

III. Awarded at the Discretion of the Faculty.

1. THE HON. ROBERT JONES' SCHOLARSHIP, having a value of One Hundred and Twenty-five Dollars ($125.00) per annum, "is granted from time to time to some poor student for the full term of study in the Faculty of Applied Science."

Application for this scholarship should be made through the Dean of the Faculty. In awarding the scholarship the standing of the student in the matriculation examination will be considered, and the scholarship will not be continued if the standing of the student at any time during his course proves to be unsatisfactory.

2. THE BAYLIS SCHOLARSHIP, founded in memory of Mr. and Mrs. James Baylis, of Montreal, and having an annual value of $100.00, is awarded to some student who is in need of financial assistance to complete his course on entering the Second Year of the Faculty. The scholarship will be continued during the Third and Fourth Years, if the student's standing continues to be satisfactory.

Applications should be made through the Dean of the Faculty of Applied Science.

3. Three research and teaching fellowships, of the value of $500 each, have been established in the Mining Department—one endowed in memory of the late Sir William Dawson, one endowed by the late Dr. James Douglas, and a third supported by graduates in Mining in the name of the late Dr. B. J. Harrington, All three fellowships are awarded annually if suitable candidates offer.

4. A research and teaching fellowship of the value of $80.00 per month during the University session is offered to students graduating in the Metallurgical Department. The student holding this fellowship is expected to spend two-thirds of his time in research and study for the M.Sc. degree, and one-third in teaching and other work for the Department.

5. The late Dr. James Douglas, who was a member of the Board of Governors, provided during his lifetime for twelve, or more, tutorial bursaries in the Faculty of Applied Science. In assigning these bursaries account will be taken of the circumstances of the applicants as well as of their academic standing.

These bursaries have a value of $100.00 per annum, and carry the obligation of giving tutorial instruction equivalent to one evening a week, to the satisfaction of the Faculty Committee. Students in the Third and Fourth Years Applied Science only are eligible.

VII. MEDALS IN APPLIED SCIENCE.

1. The Governor-General's silver medal (the gift of His Excellency, Baron Byng of Vimy) will be awarded for graduate research work.

2. A British Association medal is open for competition to students of the graduating class in each of the seven courses, and, if the examiners so recommend, will be awarded to the student taking the highest position in the final examinations. The British Association medals and exhibition were founded by the British Association for the Advancement of Science, in commemoration of the meeting held in Montreal in the year 1884.

3. A gold medal and three prizes, offered by the Canadian Institute of Mining and Metallurgy.

4. Honours.—On graduation, honours will be awarded for high standing in professional subjects.

VIII. SCHOLARSHIPS IN MEDICINE.

1. The P. S. Ross, Ottawa Valley, and Sidney J. Hodgson Scholarships. For particulars, see pages 91 and 92.

2. The Walter J. Hoare Memorial Scholarship. Founded by Dr. Charles W. Hoare, a graduate of McGill University, in memory of his son, Walter J. Hoare, who was killed in the Great War. It is limited to pupils of the Windsor Collegiate Institute, Ontario, is tenable only in the Faculty of Medicine of McGill University, and is awarded on the result of the June Matriculation Examination each year.

3. The John McCrae Memorial Scholarship. Founded by the Canadian Fairbanks-Morse Company, and H. J. Fuller, Esq., with an endowment of $11,000, in memory of the late Lieut.-Col. John McCrae, B.A., M.D., who died while on active service at Boulogne, France, January 28th, 1918. The conditions of the award have not yet been determined.

4. A Sir William Dawson Exhibition given by the New York Graduates' Society—value $60.00.

IX. MEDALS IN MEDICINE.

1. The Holmes Gold Medal, founded by the Medical Faculty in the year 1865, as a memorial of the late Andrew Holmes, Esq., M.D., LL.D., late Dean of the Faculty of Medicine, is awarded to the student of the graduating class who receives the highest aggregate number of marks in the different branches comprised in the medical curriculum.

The student who gains the Holmes Medal has the option of exchanging it for a bronze medal and the money equivalent of the gold medal.

2. The Sutherland Gold Medal, founded in 1878 by the late Mrs. Sutherland, in memory of her late husband, William Sutherland, M.D., formerly Professor of Chemistry in this Faculty, is awarded for the best examination in general and medical chemistry, together with a creditable examination in the primary branches. The examination is held at the end of the Third Year.

3. The Wood Gold Medal, founded by Casey A. Wood, M.D., is awarded to the student of the graduating class who receives the highest aggregate number of marks in the clinical branches of the Final Year. The winner of the Holmes Medal and the winner of the Final Prize are not permitted to compete for this medal.

X. PRIZES IN MEDICINE.

1. The Final Prize.—A prize in books (or a microscope of equivalent value), awarded for the best examination, written and oral, in the final branches. The Holmes' medalist is not permitted to compete for this prize.

2. The Fourth Year Prize.—A prize in books, awarded for the best examination, written and oral, in all the branches of the Fourth Year course.

3. The Joseph Hils Prize. (Founded by the late Dr. Joseph Hils, of Woonsocket, R.I.)—A prize in books, awarded to the student who obtains the highest number of marks for a special examination in materia medica and therapeutics.

4. The Third Year Prize.—A prize in books, awarded for the best examination, written and oral, in the branches of the Third Year.

5. The Joseph Morley Drake, M.D., Prize. (Founded by the late Joseph Morley Drake, M.D.)—A microscope, to be awarded to the student of the Third Year who obtains the highest number of marks for the examinations in pathology and bacteriology.

6. The Second Year Prize.—A prize in books for the best examination in all the branches of the Second Year course.

7. The First Year Prize.—A prize in books for the best examination in all the branches of the First Year course.

XI. EXHIBITIONS AND PRIZES IN LAW.

1. An exhibition, of the value of $50.00 per annum—to be known as the Alexander Morris Exhibition—has been founded in memory of the late Hon. Alexander Morris, M.A., D.C.L., of Toronto, Ont., and will be awarded to the student who obtains the highest standing in the Second Year.

2. Various money prizes (among the number being a prize of $15.00, given by the Junior Bar Association of the Province of Quebec, to the student of the final year who takes the highest standing in civil procedure), are awarded to the students of each year who obtain the highest distinction at the examination held at the close of the session. No prize will, however, be awarded to any student unless a sufficiently high standing is attained.

3. The Montreal Bar Prize, value $50.00, is awarded by the Montreal Bar Association for the highest standing in Commercial Law.

4. One Sir William Dawson Exhibition, given by the New York Graduates' Society—value, $60.00.

XII. MEDALS IN LAW.

1. The Elizabeth Torrance Gold Medal is awarded to the student who obtains the highest marks in the final examination, provided that his answers are, in the estimation of the Faculty, of sufficient merit to entitle him to this distinction.

XIII. MEDALS IN DENTISTRY.

The F. A. Stevenson Gold Medal, founded by Dr. F. A. Stevenson, of Montreal, is awarded to the student in the Final Year who stands first in the science and practice of Dentistry. The standing will be determined not only by the written and practical examination at the end of the year, but by the general work of the student during the whole year.

XIV. PRIZES IN DENTISTRY.

Final Year Prize:—A prize in books will be awarded to the final year student who stands second in the class. The standing will be determined in a manner similar to that followed in the awarding of the gold medal

Third Year Prizes:—Two prizes in books will be awarded to Third Year students in the science and practice of Dentistry. The method of determining the winners of these prizes will be similar to that adopted in awarding the prizes in the Final Year.

MORALS AND DISCIPLINE.

1. University discipline shall be exercised by the several Faculties, and by the Committee on Morals and Discipline, subject in the cases hereinafter mentioned to revision or confirmation by Corporation.

2. Subject to the provisions of the following sections, each Faculty shall be entitled to exercise University discipline over its own students.

3. All cases of discipline involving the interests of more than one Faculty, or of the University in general, shall be dealt with by a standing Committee of Corporation, to be known as the Committee on Morals and Discipline. The Committee shall have power to summon as assessors the President and Vice-President of the Students' Council.

4. All such cases of discipline as are referred to in sub-section 3 shall be reported to the Principal, or, in his absence, to the Vice-Principal, or, in the absence of both, to the senior Dean present in the city. If the Principal, or, as the case may be, the Vice-Principal or the Dean, deems action necessary, the matter shall be reported to the Committee on Morals and Discipline. Corporation shall also have the power to report such matters to the said Committee.

5. When sentence of expulsion, or of suspension for more than three months, has been pronounced or recommended by a Faculty, or by the Committee on Morals and Discipline, the Corporation may entertain an appeal, which shall be final.

6. "University discipline" shall mean any appropriate method of exercising authority over students, and shall, but without prejudice to the foregoing generality, include the power of expulsion, suspension, disqualifying from competing for scholarships, exhibitions, medals, prizes or honours, imposing fines, not exceeding $25.00, on any student, levying assessments for damage done, reporting to parents or guardians and admonition.

7. Any student found guilty of immoral, dishonest, disorderly or improper conduct, or of wrongfully causing damage to person or property, shall be liable to University discipline.

The following resolution should be noted here: "The Corporation of the University viewing with marked disfavour the organized kidnapping or other proceedings of a violent and objectionable character practised by the students of the First and Second Years at the beginning of the Session, hereby requires the student body to discontinue such practices under severe penalties."

8 If on an occasion of general disorder on the part of a year, class, or group of students, damage be done to University property, or acts committed meriting discipline, and the individuals who have done such damage or committed such acts, have not been discovered, an assessment to cover the damage may be laid, or a fine imposed, or both, on all the members of such year, class or group.

9. While in College, or in the college grounds, students shall conduct themselves in the same orderly manner as in the class-rooms. Smoking is prohibited in the college buildings, except in such rooms, if any, as may be set apart for that purpose. Any professor observing improper conduct on the part of a student in the college buildings or grounds may admonish him, and, if necessary, report him to the Dean of the Faculty in which he is enrolled. Without, as well as within, the walls of the college, every student is required to maintain a good moral character.

COLLEGE GROUNDS AND ATHLETICS

1. The management of the college grounds and of out-door athletics and sports is under the control of the Committee on Physical Education. This Committee is responsible for the general maintenance of all University grounds, and retains the ultimate authority and power of supervision in all matters affecting athletics in the University. All matters which may in any way affect athletics must be referred to this Committee, and its approval must be obtained before any departure is made from the authorized routine.

All students entering the University for the first time and all others desirous of taking part in football matches, or otherwise engaging in violent athletic contests, must pass a medical examination to be held under the direction of the Director of Physical Education during the month of October. A complete record of all such examinations shall be kept by the Director or some other officer appointed to this duty. The managers and captains of clubs, or other responsible executive officers, are required to insist upon the strict observance of the rule in regard to medical examination and all the rules and regulations of the Committee which concern them.

All clubs must submit their regulations, rules, and by-laws, and any changes in the same, for the approval of the Committee. They must make application for the use of such portions of the grounds as they require, and for any special privileges.

Clubs must not engage in matches with outside clubs, except with the approval of the Committee.

During the session, and including the Christmas holidays, all teams and individual students desiring to participate in outside athletics* must first obtain a sanction from the Athletic Association, such sanction to be approved by the Committee on Physical Education.

Students who participate in outside athletics without having received such sanction may be suspended from the University by the Committee on Physical Education, if the consent of the Principal has been given, until Corporation shall meet to deal with the matter.

The Athletic Association must submit its programme for each year for the approval of the Committee.

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*Outside athletics is interpreted to mean those athletics over which the Athletic Association of the University or the Canadian Intercollegiate Athletic Union does not have control.

All students in good standing who are taking a course of study held to be sufficient by a special committee of the Faculty in which they are enrolled will be allowed to take part in athletics, subject, however, to the general regulation regarding medical examination.

Suspension from lectures for any cause, or absence from more than one-eighth of the total number of lectures given in any course, as shown by the monthly reports furnished to the Dean of each Faculty by the several professors and lecturers, shall be considered as sufficient ground to disqualify a student from engaging in athletic contests.

All students of the University are required to pay a fee of three dollars ($3.00) for the use of the grounds (this is included in the general fee of $12.00 paid by undergraduates). The amount so paid is handed over to the Students' Council, and is by this body expended in the interest of college athletics, under the general direction of the Committee on Physical Education.

The amount derived as grounds and athletics fees from the students of the Royal Victoria College is placed at the disposal of the Committee in charge of the grounds, for expenditure in the interests of women-students.

The annual sports of the University are held on the third Friday of October in each year. The day is observed as a holiday.

Such persons as are entitled to use the grounds shall be provided with tickets, renewable each year. Those entitled to tickets are the members of the University and prominent benefactors, and the families of Governors and Professors.

UNIVERSITY ATHLETIC ASSOCIATION.

All matters connected with athletics at the University are under the immediate supervision of the University Athletic Association, which in turn is responsible to the Committee on Physical Education. The Excutive of the Athletic Association consists of the presidents of the various clubs of the Association, thirteen in number.

The Track Club is entrusted with the regulation and encouragement of track and field athletics; the management of the Inter-class sports and of the annual University sports.

The Rugby Football Club is represented by a senior and intermediate team in the Intercollegiate Union, and a junior team in the Q.R.F.U. In addition to these championship matches, a series of inter-faculty or inter-class matches is played annually for the "Wood Cup."

The Hockey and Skating Club is represented by a Senior Team in the Intercollegiate League and by Intermediate and Junior Teams in the City League. A series of Inter-class games is played annually for the "Capper-Porter Trophy." In addition an all-star inter-faculty series is played.

The Basketball Club is represented by the Senior Teams in the Intercollegiate and City Leagues and by Intermediate and Junior Teams in the City League. A series of Inter-class games is played annually.

The Boxing, Wrestling and Fencing Club, in addition to holding an annual "Assault at Arms," is represented in Intercollegiate competition.

The remaining clubs, most of which are represented in Intercollegiate Unions, are: Harriers, Association Football, English Rugby, Ski-ing and Snowshoeing, Gymnastics, Tennis, Swimming, Water Polo and Indoor Baseball.

PHYSICAL EDUCATION.

For particulars, see page 401.

ACADEMIC DRESS

Professors, lecturers and students are required to wear academic dress at lectures, except in those cases in which a dispensation shall have been granted by the Faculty.

Undergraduates shall wear a plain black stuff gown, not falling below the knee, with round sleeve cut above elbow.

Bachelor of Arts.—Black stuff gown, falling below knee, with full sleeve cut to elbow and terminating in a point (similar to that of the Cambridge B.A.); hood, black silk, lined with pale blue silk and edged with white fur.

Bachelor of Science.—The same gown as Bachelor of Arts; hood, black silk, lined with yellow silk and edged with white fur.

Bachelor of Science in Agriculture.—The same gown as Bachelors of Arts; hood, black silk, lined with dark green silk and edged with white fur.

Bachelor of Civil Law.—The same gown as Bachelors of Arts; hood, black silk, lined with French grey silk and edged with white fur.

Bachelor of Laws.—The same gown as Bachelors of Arts; hood, black silk, lined with scarlet silk and edged with white fur.

Bachelor of Architecture.—The same gown as Bachelors of Arts; hood, black silk, lined with white silk and edged with white fur.

Bachelor of Music.—The same gown as Bachelors of Arts; hood, black silk, lined with pale mauve silk and edged with white fur.

Bachelor of Commerce.—The same gown as Bachelors of Arts; hood, black silk lined with purple silk and edged with white fur.

Master of Arts.—Black gown of stuff or silk, falling below knee, with long sleeve with semi-circular cut at the bottom (similar to that of the Cambridge M.A.); hood, black silk, lined with pale blue silk.

Master of Science.—The same gown as Masters of Arts; hood, black silk, lined with yellow silk.

Master of Laws.—The same gown as Masters of Arts; hood, black silk, lined with scarlet silk.

Doctor of Medicine.—The same gown as Masters of Arts; hood, scarlet cloth, lined with dark blue silk.

Doctor of Dental Surgery.—The same gown as Masters of Arts; hood scarlet cloth, lined with pink silk.

Doctor of Laws.—The same gown as Masters of Arts; hood, scarlet cloth, lined with white silk.

Doctor of Literature.—The same gown as Masters of Arts; hood, scarlet cloth, lined with pale blue silk.

Doctor of Science.—The same gown as Masters of Arts; hood, scarlet cloth, lined with yellow silk.

Doctor of Civil Law.—The same gown as Masters of Arts; hood, scarlet cloth, lined with French grey silk.

Doctor of Music.—The same gown as Masters of Arts; hood, scarlet cloth, lined with pale mauve silk.

Doctor of Philosophy.—The same gown as Masters of Arts; hood, scarlet cloth, lined with pale green silk.

Doctors of Laws, Doctors of Civil Law, Doctors of Literature, Doctors of Science, Doctors of Philosophy and Doctors of Music shall be entitled to wear for full dress a robe of scarlet cloth (similar in pattern to that of the Cambridge LL.D.), faced with silk of the same colour as the lining of their respective hoods.

All hoods shall be in pattern similar to that of the Masters of Arts of Cambridge University.

Undergraduates and graduates shall wear the ordinary black trencher with black tassel, but Doctors of Laws, Doctors of Civil Law, Doctors of Literature, Doctors of Science, Doctors of Philosophy and Doctors of Music shall wear for full dress a black velvet hat with gold cord, similar to that worn by Doctors of Laws of Cambridge University.

Samples of the colours of the linings of all hoods shall be kept for inspection in the office of the Registrar.

For the information of graduates in Great Britain, it may be stated that the gowns and hoods for the various degrees specified above can be purchased from Messrs. Ede, Son & Ravencroft, 93 and 94 Chancery Lane, London, W.C. 2.

FACULTY OF ARTS.

COURSES FOR THE DEGREE OF B.A.

Students may enter the Undergraduate Course by passing either the Junior or the Senior Matriculation Examination. In the former case, in order to obtain the degree of B.A. or B.Sc., they are required to attend regularly the prescribed courses of lectures for four years; in the latter, for three. No course or courses can be counted towards a degree or diploma in the Faculty of Arts except such as have been taken and passed after matriculation requirements have been satisfied and according to the regulations governing the various years of the Undergraduate Course. Undergraduates are arranged in Years, from First to Fourth, according to their academic standing. The respective conditions of passing into the last three years of the course are stated on page 125.

The courses in each department shall be of three hours a week each. The third hour, if not needed for lecture purposes, may, with the consent of the Department, be used by the instructor for conferences or laboratory work.

An undergraduate may proceed to the degree of B.A. by taking either the Ordinary Course or one of the Honour Courses.

1. THE ORDINARY COURSE FOR THE DEGREE OF B.A.

In the First Year six courses shall be taken i.e., eighteen hours of class work per week; in the Second Year, five courses (fifteen hours); and in the Third and Fourth Years respectively, four courses (twelve hours).

FIRST YEAR.

(*a*) *Compulsory:*

Latin *or* **Greek.**
English (two hours Literature, one hour Composition).
Mathematics.

But in the case of students taking three languages (exclusive of English), Mathematics shall not be compulsory.

(*b*) *Elective:*

Three of the following:—
History.
Greek *or* **Latin.**
French.
German.
Science (**Physics** *or* **Chemistry** *or* **Biology**).

Details of the work in each subject are given on pages 129 to 170.

French cannot be taken as a qualifying option in the First Year, except by students who have passed the matriculation examination in that subject, or, failing this, are able to satisfy the Head of the Department that they are qualified to proceed with the course.

Application to take additional courses must be made to the Dean at the beginning of the session.

Advanced Courses.—A student qualified to take work of a more advanced character than the ordinary course of the First Year in any subject, shall, with the consent of the B.A. Advisory Committee, take such advanced work in that subject as the department concerned may recommend. Students taking advanced courses may be excused from the corresponding ordinary courses on the recommendation of the department.

Advisers.—The registration day for First Year students shall be at least two days before the commencement of the Session. On registration each First Year student shall select an adviser, or shall be assigned an adviser from a list appointed by the Dean to act in that capacity throughout the session. A student shall select his course of study and shall register only after consultation with his adviser.

Probation.—Reports on First Year students who are delinquent in their work shall be submitted to the Dean's office by the instructors at two stated dates before Christmas and on one date in the second term (March). A student who in two successive tests is below the required standard in half his subjects shall be placed "on probation." If in any three consecutive tests he is still below the required standard he shall be "dropped" from the University for that year and shall not be allowed to re-enter the University except with the consent of the Faculty concerned. During his period of "probation" a student shall not be allowed to be a member of a class or college athletic team or to hold office in a class or college society. It is understood that the first term examination shall constitute one of the tests.

SECOND, THIRD, AND FOURTH YEARS.

Students shall choose three subjects for continued study through the Second, Third and Fourth Years.

These shall be designated the Continuation Subjects.

In each of the Continuation Subjects a full course, or two half courses will be taken each year.

Two of the Continuation Subjects may be selected from Division I, of the list below, and one from Division II; or two may be selected from Division II and one from Division I.

Division I	Division II	Division III	Division IV
English.	Economics and	Botany	Education.
French.	Political Science.	Chemistry.	Music.
German.	History.	Geology.	
Greek.	Mathematics.	Physics.	
Hebrew.	Philosophy.	Zoology.	
Latin.	Social Science.		

Additional courses, or the equivalent number of half courses, shall be chosen as follows:—

In the Second Year—Two additional full courses;

In the Third Year—One additional full course;

In the Fourth Year—One additional full course;

Of the additional courses two must be taken from Division III, the remaining two may be selected at will from any of the Divisions.

LIST OF COURSES AND PREREQUISITES

Second Year		Third Year		Fourth Year	
Course	Prerequisite	Course	Prerequisite	Course	Prerequisite
DIVISION I.					
English 3, 4	1 and 2				
French 2	1	4, 5	2	4, 5	2
German 5	2	7, 10	5	7, 10	5
Greek 2	1				
4	2	5	2 or 4	5	2 or 4
Hebrew 1		2, 6, 7	1	2, 6, 7	1
		3, 4, 5	Greek 2	3, 4, 5	Greek 2
Latin 2	1	3	2	3	2
DIVISION II					
Econ. & Pol. Sci. 1, 2					
		3	1 or 2	4, 5	1
		4, 5	1	11	2
		10, 11	2	14, 15	1 or 2
History 2	1	3	2	4	3
Mathematics 3	1 or 2	3	1 or 2	3	1 or 2
		4, 5	3	4, 5	3
		6, 7	4	6, 7	4
Philosophy 1,2		3, 5	1 or 2 ... 7	3, 5, 6 or 9	1 or 2
		6 or 9, 7		7, 10	
				13, 14, 15,	
				16, 18	
Social Science 1		2, 3		2, 3	
DIVISION III.					
Botany 3, 4	1 or 2	4	1 or 2	6, 7	1 or 2, 3, 5
		5	3		
Chemistry 1		1		1	
Chemistry 2	1	2	1	2	1
Chemistry 3	2	3	2	3	2
Geology 1		1, 2, (3		1, 2, (3	
		and 4)	1	and 4)	1
Physics 2, 3A		2		2	
	1 or 2	3A	1 or 2	3A	1 or 2
		6A	3A	6A	3A
Zoology 1		1		1	
5	1	2, 4, 5	1	2, 4, 5	1
DIVISON IV.					
Education		1		2	
Music 1		1			
		2	1	2	1

Details of the work in each subject are given on pages 129 to 170.

Honour lectures are open to candidates for the Ordinary degree in the Third and Fourth Years, on the recommendation of the Department concerned and with the approval of the Dean.

GENERAL RESTRICTIONS.

The selection of courses within the Continuation Subjects or as additional courses will be under the following restrictions:—

1. A course intended primarily for First Year students may be counted as a full course in the Second Year, but only as a half course in the Third and Fourth Years.

2. Only those courses may be chosen for which the student has fulfilled the prerequisites laid down by each Department.

3. Students are responsible for seeing that courses chosen do not conflict as regards hours of lectures or laboratory periods.

For regulations whereby the double course in Arts and Applied Science can be taken in six years and in Arts and Medicine in eight, see pages 121, 126 and 127.

SUMMER READINGS.

(*For students entering the Second, Third and Fourth Years.*)

Summer readings are obligatory for every undergraduate and conditioned undergraduate in the Faculty, except in the case of candidates who read and compete for scholarships and exhibitions in September.

The readings prescribed for the session 1922-23 are posted on the notice boards of the Arts Building and the Royal Victoria College.

The summer readings for Honour students about to enter the Fourth Year are left in the hands of the Departments concerned.

Students will be required at the beginning of the session (Thursday, October 5th, p.m.) to pass an oral examination in each of the books selected by them.

Students who fail to do this must, before the end of the first term, take a written examination; failure to pass this examination involves the same penalties as failure in one subjet in the sessional examination s.

II. HONOUR COURSES FOR THE DEGREE OF B.A.

Full Honour courses are offered by the following Departments:—

Chemistry.
Classics.
Economics and **Political Science.**
English.
Geology and **Mineralogy.**
History.
Modern Languages.
Oriental Languages.
Philosophy,

and by the following combined departments:—

Botany and **Zoology** (Biology).
Mathematics and **Physics.**

Moreover, with the approval of the Dean and of the Departments concerned, students may take Honours in two Departments or in one Department and in part of another, or where Departments are divided into two sections a student may take Honours in one section of each of the two Departments. The sections of Departments recognized under this clause are:—

In the Department of	Classics	**Latin and Greek.**
" " "	" Modern Languages	**French** and **German.**
" " "	" Economics & Political Science	**Economics** and **Political Science.**
" " "	" Philosophy	**Philosophy** and **Psychology.**

In the Departments of English and History, Honours are awarded for one-half of the departmental work when taken in connection with one section of another Department or with another whole Department, but in such cases graduates are indicated as having taken Honours in English (one-half) and History (one-half) respectively.

Honour Courses begin in the Second Year. Departments, however, should, whenever possible, have advanced classes for the better students of the First Year.

The conditions for taking up Honour subjects in the Second Year are as follows:—

(a) The student must have passed in five of the six subjects taken in the First Year.

(b) The sanction of the Dean and of the Head or Heads of the Departments in which Honours are sought must be obtained.

(c) No student shall take Honours in a subject in which he has failed.

A Second Year ordinary student who shows exceptional merit in any subject in his Second Year examination may, if he so wishes, and the Head of his Department is satisfied that his knowledge of the subject is sufficient to enable him to reach the standard of Honours by only two

more years' study, be allowed to take up the Honour course in that subject in his Third and Fourth Years.

Honour Courses in the Second Year shall consist of 15 hours and in each of the remaining two years 12 hours, covering lectures, conferences and tutorial classes. The work shall also involve wide reading and study in the subject, apart from the actual subjects of lectures, in accordance with a definitely prescribed programme.

Attention is drawn to the fact that lectures will not be given on all parts of the work.

In his Second Year the Honour student must take in addition to courses in his Honour subjects not less than two courses in subjects other than those in which he is taking Honours, these subjects to be chosen on the advice of the Head or Heads of the Departments of his Honour subjects. In either or both of his last two years his work may include, at the discretion of the Head or Heads of the Honour Departments, one course in a subject other than his Honour studies. A student who has failed in any such subject in the Third Year examinations shall not be allowed to continue his Honour course except with the consent of the Faculty.

Honour students who fail to attain Honour standing at the end of the Year shall revert to the ordinary courses in their next Year, unless they obtain special leave from the Faculty to continue their Honour course on the representation of the Heads of the Departments concerned.

Honour lectures are open to candidates for the ordinary degree in the Third and Fourth Years, on the recommendation of the Department concerned and with the approval of the Dean.

The examinations for Honours will not be conducted exclusively by persons who have given the courses.

III. THE ORDINARY COURSE FOR THE DEGREE OF B.Sc.

An undergraduate may proceed to the degree of B.Sc. in Arts by taking either one of the two Ordinary Courses or an Honour Course.

There are two Ordinary Courses, designated respectively A and B.

Ordinary Course A.

This course has been arranged to give students a thorough training in science as a preliminary to entering a technical business or profession, or for teaching.

First Year.

Chemistry 1.
English 1 and 2.
French 12 *or* **German 3**
Mathematics 1.
Physics 1.

Special arrangements will be made for students who have passed the matriculation examination in German.

Details of the work in each subject are given on pages 129 to 170.

Selection of Courses.

Second Year. In addition to English (for which French or German may be substituted), three subjects must be chosen, of which two must be selected from Group I below; the third subject may be taken from Group I or Group II.

Third and Fourth Years.—The two subjects selected from Group I must be continued in the Third and Fourth Years.

GROUP I.

SUBJECTS.	SECOND YEAR.	THIRD YEAR.	FOURTH YEAR.
Biology	Zoology 1. Botany 2.	Zoology 2 *or* 4; *or* Botany 6.	Botany 6 *or* Zoology 2 *or* 4.
Chemistry.	2 *or* 3 and 4.	2 *or* 3 and 9.	5 *or* 6; and 8.
Geology.	1.	5 and 6.	2, 3, 4,
Mathematics.	3.	4 and 5.	7, 8.
Physics.	2 *or* 3.A.	2 *or* 3A and one of 3B and 4 *or* 5A.	3B and 4 *or* 5A and one of :—5 B,6A, 8A.

GROUP II.

SUBJECTS.	SECOND YEAR.	THIRD YEAR	FOURTH YEAR
Economics and Political Science.	1 or 2.	Any one of:— 3, 4 and 5, 10 and 11, 14, 15.	Any one of:—3, 4 and 5, 10 and 11, 14, 15, not chosen in the Third Year.
English.	3 and 4.	Any one of:— 6, 7, 15, 18.	Any one not taken in the Third Year, of 6, 7, 9, 10, 11, 15, 18,
History.	2.	3.	4.
Philosophy.	Any one of:— 1, 2,	3 *or* 5 *or* 7 *or* 9 *or* 14.	3 *or* 5 *or* 7 *or* 9 *or* 10 *or* 14, whichever has not been taken in the Third Year.

Students whoso desire may on applicacion be permitted to substitute Education in either the Third or Fourth Year for one course in Group II.

Students selecting Physics, as one of the three subjects of the ordinary B.Sc. course, must also select Mathematics.

Ordinary Course B.

Double course B.Sc., M.D.

This course in the physical and biological sciences is especially devised for students who might wish to proceed to a degree in Medicine or to advanced work in physiology, biological chemistry, pharmacology or allied subjects. Students intending to enter the Faculty of Medicine must pass the matriculation examination in Latin before admission to the Third Year of the B.Sc. course.

Graduates in this course are qualified to enter the Third Year in the Faculty of Medicine.

First Year.

English 1 and 2.
German 3.
Mathematics 1.
Physics 1.
Chemistry 1.
French. 12.

Second Year

German 4 *or* French 2.
Physics 2.
Botany 1.
Zoology (as in First Year Medicine).
Chemistry 3.

Third Year.

Chemistry 2 and 4.
General Physiology (as in Second Year Medicine).
Ethnology.
Physics 3.
Histology and Embryology (as in Second Year Medicine)
Botany 4.
Zoology 5.

Fourth Year.

Chemistry 7 and 10.
Anatomy (as in Second Year Medicine or Special Advanced Biology).
Physiology (as in Third Year Medicine).

IV. HONOUR COURSE FOR THE DEGREE OF B.Sc.

Students proposing to take an Honour Course must select one principal subject from Group 1 (page 48), in which subject they must have obtained at least high second class standing in the First Year. If the subject chosen for honours is not offered in the First Year, an aggregate standing of high second class must be obtained in all subjects of the First Year.

Students who fail to retain their honour standing will be required either (1) to repeat the year in honours or (2) to repeat the year in the ordinary course or (3) to proceed to the following year, reverting to the ordinary course at the discretion of the B.Sc. Advisory Committee.

The exact courses of study will be specified by the department concerned. All students will be required to take a course in German 4.

V. COURSE IN ENGINEERING PHYSICS.

There is an increasing demand for men with an advanced knowledge of mathematics and physics, who are capable of conducting investigations of a research character.

With a suitable training, openings in this field of work may be found in Research Laboratories of the Government and of Electric Corporations, in consulting work, and in University appointments.

It is to be noted that this course is open to capable students from Arts and Applied Science.

The course in Engineering Physics is open to students in Arts entering their Third or Fourth Year, provided they have satisfactorily passed in the following prerequisites:—

Mathematics 3, 4, 5 (a).
Physics 1, 3A, 3B, 4, *or* **2, 3A, 3B, 4.**

Third Year.

Mathematics 7, 8, 5 (b) (pages 150 and 151).
Physics 5A, 5B, 6B, *or* **8B** (page 167).
Electrical Engineering 113, 114 (see page 231).

During their summer vacation at the end of the Second Year, students must spend three months at an approved shop or radio station.

Fourth Year.

Mathematics 9 *or* **10** (page 151).
Physics 6A, 6B, *or* **8B, and 7A, 7B, and 8A** (page 167).
(Summer Thesis or Shop Work.)

The student may now receive the degree of B.Sc. (Arts), with honours in Mathematics and Physics. In the Fifth Year the student should take the whole of the Fourth Year course for Electrical Engineering (See Bulletin Faculty of Applied Science, and also Physics 9 and 12 *or* 14 (6A has already been taken), and proceed with research work and a thesis with a view to an M.Sc. degree.

The course must therefore cover five years and should cover six. During the last year (the sixth), opportunity would usually be afforded to act as demonstrator with a salary.

A student who has completed his Second Year in the Faculty of Applied Science and has received first or second class rank in Mathematics and Physics may join the course in Engineering Physics as outlined above, subject to the approval of the heads of the Departments of Electrical Engineering and Physics.

VII. B.Sc. IN AGRICULTURE.

Particulars regarding the course for the degree of Bachelor of Science in Agriculture, the first two years of which are taken in the Faculty of Arts, are given in the Macdonald College Announcement.

VIII. DEGREE OF BACHELOR OF HOUSEHOLD SCIENCE (B.H.S.)

The first two years are to be taken in the Faculty of Arts, and the last two in the School of Household Science of Macdonald College, but the Dean, or the B.A. Advisory Committee of the Faculty of Arts of McGill University, must pronounce on the qualifications of a candidate before he or she can be admitted to the Third Year of this course.

The two years in the Faculty of Arts may be either in the B.A. or the B.Sc. course. For the subjects in the former see page 113; for those in the latter, page 119.

Proposed subjects to be taken in the school of Household Science at Macdonald College:—

Third Year.

Economics (1 hour).
English. (2 hours).
Principles of Teaching (1 hour—half-year).
Bacteriology (1 hour lecture, 2 laboratory periods—half-year).
Biology (1 hour lecture, 1 laboratory period).
Chemistry (1 hour lecture, 2 laboratory periods).
Foods (2 hours lecture, 2 laboratory periods).
The Home (1 hour lecture, 1 laboratory period.)
Textiles and Clothing (3 hours—half-yearly).

Fourth Year.

English (2 hours).
Principles of Teaching (2 hours lecture—practice teaching).
Bacteriology (2 hours lecture, 1 laboratory period).
Chemistry (2 hours lecture, 2 laboratory periods.)
Physics (3 hours—half-year).
The Home (2 hours).

PARTIAL STUDENTS.

Students desiring to take a Partial Course in Arts are required to pass the matriculation examination in the subject or subjects which they intend to study, or, failing this, they must satisfy the Head of the Department as to their ability to follow the course. Subject to the above limitations, lectures are open to partial students in both Honour and Ordinary Courses, but no course or courses taken by such students can count for a degree, except by virtue of a special vote of Faculty. Medals, scholarships, exhibitions and prizes shall not be awarded to partial students, A certificate of standing can be obtained from the Dean if requested. A partial student who fails in any subject at the first term examinations shall be allowed to continue that subject only on the recommendation of the Head of the Department concerned.

EXAMINATIONS IN ARTS.

There are two examinations in each session, the Intermediate and the Final. Intermediate Examinations are held either at the end of the first term, or at such intervals during the session as each department may prescribe. In the Second, Third and Fourth Years, Intermediate Examinations will be held or not, as may be determined by each department.

Students prevented by illness from attending the Intermediate Examinations will, on presenting a medical certificate to the Dean, be given sessional standing on the result of the Final Examination.

Seventy-five per cent. of the marks given for the sessional work in each subject will be assigned to the Final Examination.

Successful students are arranged in three classes.

"Distinction in an Ordinary Degree.—For an ordinary degree with distinction the candidate shall obtain 75 per cent. of the maximum marks assigned in half the subjects taken in the Third and Fourth Years and not less than 60 per cent. in the remainder."

Examinations supplemental to Final Examinations are held in the month of September simultaneously with the matriculation examination. The date of the supplemental examinations will be fixed by the Faculty and no examination will be granted at any other time, except by special permission of the Faculty, and on payment of a fee of ten dollars.

ADVANCEMENT FROM YEAR TO YEAR.

Advancement to the Second Year—A student may proceed to the Second Year with any one full course (or its equivalent) unpassed. (This cannot, however, be a Junior Matriculation subject).

Advancement to the Third Year.—A student may proceed to the Third Year with any one full course (or its equivalent) unpassed, unless that full course (or any part of it) belongs to the First Year.

Advancement to the Fourth Year.—A student may proceed to the Fourth Year with any one full course (or its equivalent) unpassed, unless that full course (or its equivalent) is compulsory in the Second Year.

Repeating a year—By special permission of the Faculty, a student who is required to repeat a year may, on application:—

(a) Be exempted from attending lectures and passing examinations in the subjects on which he has already passed;

(b) Be permitted to take, in addition to the subjects in which he has failed, one of the subjects of the following Year in his course.

N.B.—The choice of subjects must involve no conflict of hours as printed in the time-table.

DOUBLE COURSES

ARTS AND APPLIED SCIENCE

Candidates for the degree of B.A. and B.Sc. (Applied Science) in six years will take the first three years in Arts. They will then enter the Faculty of Applied Science and devote the remaining three years entirely to the work of that faculty. Only students in good standing will be permitted to take the course. Those who wish to do so must notify the Dean of the Faculty of Applied Science before the close of their First Year in Arts (May).

Descriptive Geometry, Freehand Drawing and Mechanical Drawing.—Not later than October 10th of their Second Year in Arts students intending to enter this course must see the Heads of the Departments concerned and make arrangements with them for procuring private instruction in these subjects. They must report to them from time to time, and after they have given evidence of having covered the ground adequately they will be given an examination.

Shop-work.—The shop-work may be taken in two periods of two weeks each in successive years in the second half of May *immediately after* the close of the Arts examinations.

Surveying.—One half of their surveying fieldwork may be done in the fortnight *immediately after* the completion of their Third Year; the rest of it in the latter part of the following September in connection with the Survey School then held for Fourth Year Civil Engineering students. In some cases it may be possible to do the whole of the survey fieldwork in September in the School mentioned above. Students desiring to do this should apply to the Dean of the Faculty of Applied Science not later than the 1st of May.

The requirements for each of the three years in the Faculty of Arts are as follows:—

First Year.

The curriculum as laid down for the B.A. degree, except that Physics 1 and a modern language must be taken. It is recommended that Mathematics 2 be taken instead of Mathematics 1.

Second Year.

English 3.

French 2 *or* **German 5.**

**German 5, *or* French 2, *or* English 4, *or* Economics and Political Science 1 *or* 2, and History 2, *or* Philosophy 1 *or* 2.

Latin 2, *or* Greek 2, *or* 4.
Mathematics 3 and 5(a) and Physics 3B and 4 (students who have taken Mathematics 2 may substitute 4 for 3).

Third Year.

Physics 2.
Any three of the following:—
English, any two of 6, 9, 10, 15, 18; Latin 3; French 4; German 7; Philosophy 3, 5, 7, *or* 6 *or* 9 *or* 14; History 3; Economics and Political Science 3.

The degree of B.A. will be conferred on double course students in Arts and Applied Science on the completion of the prescribed curriculum in Arts and the requirements of the Second Year in Applied Science.

ARTS AND MEDICINE.

The degree of B.A. and M.D. may be obtained in eight years, of which the first two shall be taken in the Faculty of Arts, and the remaining six in the Faculty of Medicine. The course in Arts is as follows:—

I. B.A., M.D.

First Year.

English 1 and 2.
History 1.
Mathematics 1 *or* 2.
Latin 1 *or* Greek 1 *or* 2.
Any two additional languages.

Second Year.

Any five of the following:—
Economics and Political Science 1 *or* 2, and History 2.
English 3 and 4.
French 2.
German 5.
Hebrew 1.
Latin 2. *or* Greek 2 *or* 4
Philosophy 1 *or* 2.
Mathematics 3.

In the double course for the degrees of B,A., M.D., the degree of B.A. will be conferred on the completion of the above curriculum in Arts and of the Second Year in Medicine.

II. B.Sc., M.D.

For the requirements of the B.Sc. course for students proceeding to the Faculty of Medicine, see page 121

ARTS AND DENTISTRY.

The degrees of B.A. and D.D.S. may be obtained in six years, of which the first two shall be taken in the Faculty of Arts and the remaining four in the Faculty of Dentistry. The course in Arts is the same as that prescribed for the double course of B.A., M.D. (see I, above).

B.COM. AND B.A.

Graduates in Commerce who desire to obtain the degree of B.A. may be admitted to the Third Year in Arts provided that at some time before entering Third Year Arts they shall have taken Latin 1 of the B.A. curriculum, or an equivalent.

ARTS AND THEOLOGY.

Students who are pursuing a double course in Arts and Divinity six years at least) will take in the Third and Fourth Years the courses which constitute the ordinary curriculum in Arts, less a half course in each of these Years, or a whole course in either.

COURSES OF LECTURES IN ARTS.

The hours of all ordinary lectures and most of the honour lectures are indicated. In the case of the other honour lectures the hours will be arranged by the several departments at the opening of the session.

DEPARTMENT OF BOTANY.

PROFESSOR:—FRANCIS ERNEST LLOYD.

PROFESSOR OF MORPHOLOGICAL BOTANY:—CARRIE M. DERICK.

LECTURER:—GEORGE W. SCARTH.

DEMONSTRATOR:—JENNIE L. SYMONS.

1. **General Biology.** Parts I and III as in First Year Medicine.
   3. hrs.; Tu., Th., Sat., at 12..6 hrs. lab...Professor Lloyd, Mr. Scarth.
   (Mornings, alternating with Chemistry I).
2. **General Botany:** Introductory Course. First Year.
   2 hrs.; Wed., Fri., at 2....2 hrs lab.; Mon. 2-4;
   Professor Lloyd, Mr. Scarth, and Miss Symons.
3. **Plant Morphology and Taxonomy.** Second Year.
   3 hrs.; Tu., Th., Sat., at 9...4 hrs. lab...Professor Derick, Miss Symons.
4. **Genetics.** Second or Third Year.
   2 hrs.; Mon., Wed., Fri., at 9.....4 hrs. lab.
   Professor Derick, Miss Symons.
   (may be taken without laboratory work).
5. **Histology: Michrotechnic.** Third Year.
   3 hrs.; Mon., Wed., Fri., at 2.....4 hrs. lab.
   Professor Lloyd, Miss Symons.
6. **Introductory Plant Physiology.** Third Year.
   3 hrs.; Mon., Wed., Fri., at 9....4 hrs. lab.
   Professor Lloyd, Mr. Scarth, Miss Symons.
   Part I: General Physiology (Course 8).
   Part II: Special Plant Physiology.

6a. **Plant Physiology: Problems.** Fourth Year.
   3 hrs. reading.....4 hrs. lab.....Professor Lloyd, Mr. Scarth.

7. **Plant Pathology.** Fourth Year.
   3 hrs.; Mon., Wed., Fri., at 2.....4 hrs. lab.
   Professor Derick, Miss Symons.
8. **General Physiology.** Fourth Year.
   1st term. As in Second Year Medicine...Professor Lloyd, Mr. Scarth.
9. **Pharmaceutical Botany.** 2 hrs.

Honour Course in Biology

Prerequisites: General Biology., Parts I, II, and III. (Botany 1 and Zoology 1; or Botany 2 and Zoology 2 together with Chemistry 1 or Physics 1.)

Second Year: Botany 3 and 4; Zoology 2; Physics 1, or Chemistry 1.
Third Year: Botany 5 and 6; Zoology 3 and 6.
Fourth Year: Botany 7 and 8; Zoology 4 and 5.

Honour students should acquire a reading knowledge of scientific French and German. For Genetics and Physiology an elementary knowledge of statistical methods is advised.

DEPARTMENT OF CHEMISTRY.

DIRECTOR:—R. F. RUTTAN.

PROFESSOR OF BIO-CHEMISTRY:—A. B. MACALLUM.

PROFESSOR OF INORGANIC CHEMISTRY:—F. M. G. JOHNSON.

ASSOCIATE PROFESSORS:—N. N. EVANS. OTTO MAASS. G. S. WHITBY.

ASSISTANT PROFESSORS:—A. R. MCLEAN. H. W. HATCHER.

DEMONSTRATORS:—J. DOLID. W. R. MCGLAUGHLIN. DOROTHY CHARLTON. P. G. HIEBERT. L. J. WALDBAUER. D. W. MORRISON. W. W. THOMSON. O. B. PHILLIPS. A. CAMBRON. G. W. HOLDEN.

(Unless otherwise specified, all lectures and laboratory courses are given in the Chemistry Building.)

1. **General Chemistry.**

3 hrs.; Mon., Wed., Fri.
First Year—Professor Ruttan at 3.
Second Year—Associate Professor Evans at 12.

4 hrs. lab., Tu., Th., 3 to 5.
Assistant Professor MacLean, Miss Charlton and Mr. Thomson.

Text-Books:—Alex. Smith, General Chemistry for Colleges, new edition.

2. **Organic Chemistry.**

3 hrs., 1st term; Tu.,Th., Sat., at 12..... Professor Ruttan. (Biological Building).

2. hrs. 2nd term; Tu., Th., at 12. Professor Ruttan, 6 hrs. lab., 2 term. Associate Professor Whitby, Assistant Professor MacLean, and Messrs. Dolid, McGlaughlin and Waldbauer.

Text-Books:—Remsen or Perkin and Kipping; Norris' Experimental Organic.

3. Analytical Chemistry.

(a) QUALITATIVE ANALYSIS.

1 hr., 1st term; 9 hours lab.

Associate Professor Evans, Miss Charlton, and Mr. Thomson.

Text-Book :—Stieglitz, Quantitative Analysis.

(b) QUANTITATIVE ANALYSIS.

1 hr., 2nd term; 12 hrs. lab.

Professor Johnson and Messrs. Hiebert, Morrison and Thomson.

Text-Book :—Cumming and Kay, Quantitative Analysis.

4. Elementary Physical Chemistry.

2 hrs., 1st term; Mon., Fri., at 12.....Associate Professor Maass.

Text-Book :—Walker, Introduction to Physical Chemistry.

***5. Organic Chemistry (Advanced).**

3 hrs.; Mon., Wed., Fri., at 10 .....Associate Professor Whitby.

12 hrs. lab.

Professor Ruttan, Associate Professor Whitby, Assistant Professor MacLean, and Messrs J. Dolid and Waldbauer.

***6. Inorganic Chemistry (Advanced).**

3 hrs; Tu., Th., Sat., at 11.....Professor Johnson.

***7. Physical Chemistry (Advanced).**

2 hrs; Wed., Fri., at 9.....Associate Professor Maass.

6 hrs. lab.; Mon., Wed., 2 to 5.

Associate Professor Maass and Mr. Waldbauer.

8. Quantitative Analysis (Advanced).

1 hr.....Professor Johnson and Mr. Hiebert.

12 hrs. lab.

9. Historical Chemistry.

1 hr., 2nd term.....Associate Professor Maass.

10. Biological Chemistry.

3 hrs., 2nd term; Mon., Wed., Fri., at 3.

(Biological Building.) Professor A. B. Macallum.

6 hrs. lab., 2nd term; Wed., Sat., 9 to 12

(Biological Building.)

Prof. A. B. Macallum and Messrs. Simpson and Logan.

Text Book:—Hawk; Practical Physiological Chemistry.

***11. Biological Chemistry (Advanced).**

5 hrs. lab., 2nd term.

(Biological Building.)

Professor A. B. Macallum and Mr. G. E. Simpson.

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*Courses for Graduates and Honour Students.

12. Electro-Chemistry.

2 hrs., 1st term; Mon., at 9, Fri., at 12. .....Associate Professor Maass.

13. Food Chemistry.

1 hr., 2nd term; Th., at 10.....Professor Ruttan.
6 hrs. lab., 2nd term.
Associate Professor Whitby and Assistant Professor MacLean.

Text-Book :—Woodman's Food Analysis.

14. Industrial Inorganic Chemistry.

2 hrs., 1st term; Wed., Fri., at 11.....Professor Johnson.

15. Industrial Organic Chemistry.

2 hrs., 2nd term; Wed., Fri., at 11.....Professor Johnson.

***16. Colloid Chemistry.**

2 hrs., 2nd term, with lab.....Professor Johnson.

Honour Course in Chemistry.

Second Year: Chemistry 1.

Third Year : 2, 3, 4; Physics 2; and a half-course in calculus or biology or geology or mineralogy or scientific German.

Fourth Year : (a) 5, 7, 9, 10 (11 optional), or, (b) 6, 7, 8, 9; Physics 3.

Honour Course in Chemistry and Biology

Prerequisites: French 12; German 3; Physics 1.

Second Year : Chemistry 1; Botany 2; Zoology 1; French 2 and German 4. Third Year : Either Physics 2 or French 4 or German 7 and Chemistry 2 (first term only), 3 (a) and 10; Zoology 2; Botany 3 or 6. Fourth Year: A full course in physics or biology or advanced chemistry and Chemistry 3 (b), 11 or 16; Zoology 4; Botany 5.

*Courses for Graduates and Honour Students.

DEPARTMENT OF CLASSICS.

PROFESSOR:—GORDON J. LAING.

PROFESSOR OF GREEK: SAMUEL B. SLACK.

ASSISTANT PROFESSORS:— ALEXANDER M. THOMPSON. CLIVE H. CARRUTHERS.

SESSIONAL LECTURER AND TUTOR (ROYAL VICTORIA COLLEGE):—
ELIZABETH A. IRWIN.

Greek.

All students taking Greek are expected to provide themselves with a grammar, a Greek-English dictionary, a classical dictionary, and an atlas of ancient geography. The following are recommended: Goodwin's Greek Grammar (Ginn & Co.); Liddell and Scott's Greek Lexicon (abridged or intermediate); Putzger's Historischer Schulatlas (Velhagen und Klasing, Leipzig); Smith's Smaller Classical Dictionary (Everyman Series, Dent).

1. **Beginners' Greek.**

3 hrs. ; Tu., Th., Sat., at 10.....Assistant Professor Carruthers.
Burgess and Bonner (Scott, Foresman & Co.); Passages for Greek Translation (Peacock & Bell, Macmillan).

2. **Greek.** First and Second Years.

3 hrs. Section 1 (1st year): Tu., Th., Sat., at 10.....Professor Slack.
Section 2 (2nd year): Mon., Wed., Fri., at 11.....
Assistant Professor Thompson.
Xenophon, Anabasis, I (Goodwin and White, Ginn & Co.); Homer, Iliad XXII (Pitt Press Series, Cambridge University Press); Translation at sight (Jerram, Anglice Reddenda, Second Series).

4. **Greek.** Second Year.

3 hrs; Tu., Th., Sat., at 11.....Assistant Professor Carruthers.
Plato, Apology (Adam, Cambridge University Press); Homer, Odyssey IX (Pitt Press Series, Cambridge University Press); Euripides, Alcestis. (Blakeney, Bell's Illustrated Classics); Translation at sight as in 2.

5. **Greek.** Third and Fourth Years. Prerequisite: 2 or 4.

3 hrs.; Tu., Th., Sat., at 10.....Professor Laing.
Herodotus I (Pitt Press Series); Demosthenes, On the Peace, Philippic II, Chersonese, Philippic III (Sandys, Macmillan); Sophocles, Ajax (Campbell and Abbott, Clarendon Press); Translation at sight (Fowler, Sportella).

6. **Greek**

3 hrs. To be given in 1923-24.

Plato, Protagoras (Adam, Pitt Press); Aristophanes, Frogs (Merry, Clarendon Press); Aeschylus, Prometheus Bound (Prickard, Clarendon Press); Translation at sight (Models and Exercises in Unseen Translation, Fox and Bromley, Clarendon Press).

HONOUR COURSE IN GREEK.

This will consist of 2 or 4, 5, 6 and the following:—

11. **Greek.** Second Year.

3 hrs.; Tu., Th., Sat., at 9.....Assistant Professor Thompson.

Homer, Odyssey X, XI (Pitt Press Series, Cambridge University Press); Sophocles, Antigone (Wells, Blackie & Sons); Lucian, Menippus and Timon (Mackie, Pitt Press Series, Cambridge University Press).

12. **Greek.** Third and Fourth Years.

3 hrs.; Tu., Th., Sat., at 11.....Professor Slack.

Thucydides VII (Holden, Pitt Press Series, Cambridge University Press); Plato, Republic I, II as far as 367E (Warren, Republic I-V, Macmillan) Theocritus (Kynaston, Clarendon Press).

13. **Greek.** Third and Fourth Years.

3 hrs. To be given in 1923-24.

Aristotle, Ethics I-IV (Oxford Classical Text); Theophrastus, Characters (Oxford Classical Text); Euripides, Medea.

Latin.

All students taking Latin are expected to provide themselves with a grammar, a Latin-English Dictionary, a Classical Dictionary, and an Altas of Ancient Geography. The following are recommended:—Sonnenschein, New Latin Grammar (Clarendon Press, 1912); Lewis, School Dictionary, or White, Junior Students' Latin-English Dictionary; Smith, Smaller Classical Dictionary ("Everyman" Series, Dent).

The following books are also recommended: Roman History, Literature and Antiquities, by A. Petrie (Oxford Univ. Press); Putzger's Historischer Schulatlas (Velhagen und Klasing, Leipzig).

1. **Latin.** First Year.

3 hrs.; Mon., Wed., Fri., at 10.

Section 1 (men), Professor Laing; section 2 (men), Assistant Professor Carruthers; section 3 (women), Professor Slack; section 4 (women), Assistant Professor Thompson.

Cicero, De Senectute (Rockwood, American Book Co.); Horace, Odes I (Page, Macmillan's Elementary Classics); Composition (Writing of Narrative Latin by B. W. Mitchell, American Book Co.); and Translation at sight (Rivingtons' Class Books of Latin Unseens, Book V).

2. Latin. Second Year.

3 hrs.; Tu., Th., Sat., at 12.....Assistant Professor Carruthers.

Livy, Book XXI (Tatham, Clarendon Press); Horace, Odes, Book II (Page, Macmillan's Elementary Classics); Virgil, Aeneid, Book IV (Sidgwick, Pitt Press Series, Camb. Univ. Press); and Translation at sight, Anglice Reddenda, Second Series (Clarendon Press).

3. Latin. Third and Fourth Years.

3 hrs.; Mon., Wed., Fri., at 11 .....Professor Slack.

Cicero, Letters (Abbott, Ginn & Co.); Plautus, Captives (Morris, Ginn & Co.); Tacitus, Agricola; (Pearce, Bell's Illustrated Classics) Translation at sight (Alford, Macmillan).

4. Latin. Third and Fourth Years.

3 hrs. To be given in 1923-24.

Pliny, Selected Letters (Prichard & Bernard, Oxford Clarendon Press); Selections from the Roman Elegiac Poets, (Carter, D. C. Heath.); Martial (Post, Ginn & Co.); Translation at sight (Alford, Macmillan.)

At the beginning of the second term, if not before, an Advanced Class will be formed to prepare for Second Year Exhibitions and Third Year Scholarships. This class will be open for qualified students of the first two years.....Professor Slack.

HONOUR COURSE IN LATIN.

This will consist of 2, 3, 4 and the following:—

11. Latin. Second Year.

3 hrs.; Mon., Wed., Fri., at 9.. ..... Professor Laing.

Terence, Andria (Fairclough, Allyn and Bacon); Catullus (Simpson, Macmillan); Lectures on Roman Literature.

12. Latin. Third and Fourth Years.

3. hrs.; Mon., Wed., Fri., at 12.....Assistant Professor Thompson.

Livy I (Freeman, Oxford), II (Conway, Cambridge): Lectures on the History of the Republic; Tacitus, AnnalsI, II (Furneaux, Annals I-IV Oxford): Lectures on the History of the Empire.

13. Latin. Third and Fourth Years.

3 hrs. To be given in 1923-24.

Juvenal (Wilson, D. C. Heath); Lucretius (Merrill, Amer. Book Co.).

ADDITIONAL READINGS:

Third Year:—Horace, Satires I (except 2, 3, 7, 8), Kirkland Sanborn & Co.; Terence, Phormio (Sloman, Oxford University Press.)

Fourth Year:—Seneca (Select Letters, Summers, Macmillan, pp. 3-51); Virgil, Georgics I.

HONOUR COURSE IN CLASSICS.

Greek: 2 or 4, 5, 6, 11, 12, 13.
Latin: 2, 3, 4, 11, 12, 13.

GRADUATE COURSE FOR M.A. DEGREE.

Greek 12, 13 and Latin 12, 13, listed above, but with additional work assigned by the instructor.

Latin 21. Roman Inscriptions. Hour to be arranged.....
Professor Laing.

DEPARTMENT OF ECONOMICS AND POLITICAL SCIENCE

PROFESSOR:—STEPHEN LEACOCK.

ASSOCIATE PROFESSOR:—J. C. HEMMEON.

ASSISTANT PROFESSOR:—B. K. SANDWELL.

1. **Elements of Political Economy.** Second Year.
   3 hrs.; Mon., Wed., Fri., at 11..Professor Leacock and Associate Professor Hemmeon.

2. **Elements of Political Science.** Second Year.
   3 hrs.; Mon., Wed., Fri., at 12..Professor Leacock and Associate Professor Hemmeon.

3. **Political and Social Theories of Modern Times.** Third Year.
   3 hrs.; Mon., Wed., Fri., at 2.....Professor Leacock.

4. **Political Economy prior to 1776.** Third and Fourth Years.
   3 hrs., 1st term; Tu., Th., Sat., at 11....Associate Professor Hemmeon. Given in 1922-23. Omitted in alternate years.

5. **Political Economy from 1776.** Third and Fourth Years.
   3 hrs., 2nd term; Mon., Wed., Fri., at 3.....Professor Leacock. Given in 1922-23. Omitted in alternate years.

6. **Labour Problems.** Third and Fourth Years.
   3 hrs., 1st term; Tu., Th., Sat., at 11....Associate Professor Hemmeon Given in 1923-24. Omitted in alternate years.

7. **Money and Banking.** Third and Fourth Years....
   3 hrs,, 2nd term; Mon., Wed., Fri., at 3.....Professor Leacock. Given in 1923-24. Omitted in alternate years.

8. **Municipal Government.** Third and Fourth Years.
   3 hrs., 1st term; Tu., Th., Sat., at 11.Associate Professor Hemmeon. Given in 1924-25.

9. **Economic History: Economic Development of the Modern World, 1750-1914.** Third and Fourth Years.
   3 hrs., 2nd term; Mon., Wed., Fri., at 3.....Professor Leacock. Given in 1924-25.

10. **The Government of Canada.** Third and Fourth Years.
    3 hrs., 1st term; Mon., Wed., Fri., at 3.....Professor Leacock. Given in 1922-23. Omitted in alternate years.

11. **Canada: Industrial and Economic Problems.** Third and Fouth Years.

3 hrs , 2nd term; Tu., Th., Sat., at 11..Associate Professor Hemmeon. Given in 1922-23. Omitted in alternate years.

12. **Social and Industrial Legislation.** Third and Fourth Years.

3 hrs., 1st term; Mon., Wed., Fri., at 3.....Professor Leacock. Given in 1923-24.

13. **International Trade and Tariffs.** Third and Fourth Years.

3 hrs., 2nd term; Tu., Th., Sat., at 11..Associate Professor Hemmeon. Given in 1923-24.

14. **Public Finance.** Fourth Year.

3 hrs., 1st term; Tu., Th., Sat., at 12..Associate Professor Hemmeon.

15. **Economic Factors in the Evolution of Society.** Fourth Year.

3 hrs., 2nd term.; Tu., Th., Sat.,at 12..Associate Professor Hemmeon.

16. **Political Institutions and Political Theories of Greece and Rome.**

To be taken under Economics and Political Science by Graduate students or by Honour undergraduates.....Professor Laing Given in 1923-24.....

17. **Graduate Seminar.** Statistics, Scientific Journals, and conferences on thesis work.

1 hr.; Fri., at 5..Professor Leacock, Associate Professor Hemmeon and Assistant Professor Sandwell.

Honour Course.

Students taking the full honour course in Economics and Political Science take in their Second Year courses 1 and 2 together with a course in History and two other courses as approved by the Department; and in their Third and Fourth Years the courses indicated above, together with one approved course from another department in each year.

Students taking honour courses in the whole or in half of another department (see page 46) may be granted honours in Economics (without Political Science) by taking courses 1, 2, 3, 14, 15, and either 4 and 5, or 6 and 7, or 8 and 9; similarly, students taking honours in the whole or in half of another department may be granted honours in Political Science (without Economics) by taking courses 1, 2, 3, 14, 15, and either 10 and 11, or 12 and 13.

Graduate Course for M.A. Degree.

Prerequisite: Honour standing in the department at the examination for the B.A. degree or a qualification considered by the department to be equivalent to this.

Resident study, one year, with at least eight lectures a week selected from (a) any courses among Nos. 3 to 9 (inclusive), not already taken; (b) any special courses offered from time to time; (c) any courses approved by the department, together with a thesis.

Students who propose to take Economics and Political Science as a minor subject for the M.A. degree must have taken (a) as undergraduates courses 1, 2, 3 and two other full courses and have attained in this work a standing satisfactory to the department, or (b) work in another University recognized by the department as the equivalent of this.

Scholarships.

For Scholarships, see page 95.

DEPARTMENT OF EDUCATION.

DEAN OF THE SCHOOL FOR TEACHERS, MACDONALD COLLEGE, AND PROFESSOR OF EDUCATION:—SINCLAIR LAIRD.

1. Principles of Education; Psychology of Education; History of Education.
3 hrs., 1st term; Mon., Wed., Fri., at 5.
(To be taken preferably in the Third Year.)

2. (1) Methods of Teaching.

A. Principles of general method.

B. Special methods in elementary subjects.

C. Special methods in High School subjects.

(2) School and Class Management.

A. School adminstration, and school law and regulations of the Province of Quebec.

B. Class management and discipline.

3 hrs., 2nd term; Mon., Wed., Fri. at 5.

(To be taken in Fourth Year.)

Courses 1 and 2 are required for the High School Diploma of the Province of Quebec, together with (a) fifty half-days of practice teaching and criticism lessons under expert supervision; and (b) a course in physical education qualifying for the Strathcona Certificate, Grade B. This course is taken in the Fourth Year before Christmas.

GRADUATE COURSE.

3. Readings, Reports, Thesis.

TRAINING OF TEACHERS.

The University, through its Department of Education, undertakes the training of teachers in all grades required by the Province; and, through the Teachers' Training Committee, offers training for specialists in certain subjects. See page 170.

DEPARTMENT OF ENGLISH.

PROFESSOR OF ENGLISH AND OF COMPARATIVE LITERATURE:—
P. T. LAFLEUR.

ASSOCIATE PROFESSORS:— CYRUS MACMILLAN.
G. W. LATHAM.

LECTURER:—A. S. NOAD.

ASSISTANTS:— A. R. MCBAIN.
MARGARET PICKEL.

1. **English Composition.**

1 hr.; Fri., at 12.....Mr. Noad, Miss Pickel and Assistants.
Section and conference hours to be arranged.
Required of all First Year undergraduates.

2. **English Literature: General Course.**

2 hrs.; Mon., Wed., at 12..Associate Professor Macmillan, and Assistants.
Conference hours to be arranged.....
Required of all First Year undergraduates.

3. **English Composition.**

An advanced course open to a limited number of students who desire more practice in writing after having completed English 1.

4. **English Prose from Bacon to Stevenson.**

3 hrs.; Mon., Wed., Fri., at 3.....
Professor Lafleur, Associate Professors Macmillan and Latham and Mr. Noad.

5. **Spenser and Milton.**

3 hrs.; Mon., Wed., Fri., at 9.....Associate Professor Latham.
(Omitted in 1922-23.)

6. **Shakespere (Six Plays).**

3 hrs.; Mon., Wed., Fri., at 10.....Associate Professor Macmillan.
(May be taken in two years.)

7. **Poetry and the Drama from Dryden to Moore.**

3 hrs.; Tu., Th., Sat., at 11.....
Associate Professor Macmillan and an Assistant.
(Omitted in 1922-23; given in 1923-24.)

8. **Argumentation and Debating.**

3 hrs .....Associate Professors Macmillan and Latham.
(Omitted in 1922-23.)

9. **Poets of the Nineteenth Century.**
3 hrs.; Mon., Wed., Fri., at 4....Professor Lafleur and an Assistant.

10. **English Novelists, from Defoe to George Eliot.**
3 hrs.; Mon., Wed., Fri., at 11..... Professor Lafleur.

11. **The English Drama, 1590-1642.**
3 hrs.; Tu., Th., Sat., at 11.....Associate Professor Macmillan.
(Given in 1922-23; omitted in 1923-24.)

12. **Methods of Literary Criticism.**
3 hrs. .....Professor Lafleur.
(Omitted in 1922-23.)

13. **Anglo-Saxon.**
3 hrs., 1st term; Mon., Wed., Fri., at 2...Associate Professor Latham.
Text-Book:—Sweet, Anglo-Saxon Reader (all the prose).

14. **Anglo-Saxon Poetry and Introduction to English Philology.**
3 hrs., 2nd term; Mon., Wed., Fri., at 2..Associate Professor Latham.
Text-Book:—Sweet, Anglo-Saxon Reader (all the verse).
Prerequisite:—13.

15. **Chaucer.**
3 hrs., 1st term; Mon., Wed., Fri., at 9...Associate Professor Latham.

16. **American and Canadian Literature.**
3 hrs.; Mon., Wed., Fri., at 9.....
Associate Professors Macmillan and Latham.

17. **Comparative Literature.**
(The influence of English literature upon the continent of Europe, chiefly during the 18th and 19th centuries.)
3 hrs.; Tu., Th., Sat., at 10 .....Professor Lafleur.
(Omitted in 1922-23.)

18. **Comparative Literature.**
(The literary relations between England and the continent of Europe, through the works of leading French, German, Spanish and Italian writers, beginning with Montaigne.)
3 hrs.; Tu., Th., Sat., at 10.....Professor Lafleur.

19. **The English Bible.**
3 hrs., 1st term; Tu., Th., Sat., at 9 .....
Professor Gordon and Associate Professor Macmillan.

Honour Course.

Second Year:—4, and one course selected from 6, 16, 19.
Third Year:—Four courses, including 13.
Fourth Year:—Four courses not taken in the Third Year, including 14.

English requirements for the Honour courses in English and Latin, English and French, and English and German.

Second Year:—Consult the Head of the Department.

Third Year:—Any courses aggregating six hours a week, including 13, chosen from 5 to 19.

Fourth Year:—Any courses aggregating six hours a week chosen from 5 to 19, not taken in the Third Year.

English requirements for the Honour courses in English and other subjects.

Second Year:—Consult the Head of the Department.

Third Year:—Courses aggregating six hours chosen from 5 to 19.

Fourth Year:—Any courses aggregating six hours chosen from 5 to 19, not taken in the Third Year.

Graduate Courses.

20. Anglo-Saxon.
Beowulf.
2 hrs.....Associate Professor Latham.

21. The English and Scottish Popular Ballads, with some attention to Canadian Folk-songs and Folk-tales and their relation to those of Europe.
2 hrs..... Associate Professor Macmillan.

22. Comparative Literature.
Epistolary Literature.
2 hrs.....Professor Lafleur.

23. Comparative Literature.
Memoirs and Memoir-Writers beginning with Philippe de Commine
2 hrs.....Professor Lafleur.

42. Chaucer. Prerequisite:—15.
2 hrs.....Associate Professor Latham.

25. The Drama in England from 1660 to 1920.
2 hrs.....Associate Professor Macmillan.

Candidates for M.A. in English must take twelve hours of lectures a week, six of which shall be selected from "Graduate Courses." The remainder may be selected from 5 to 19, inclusive, if not already taken. Course 13, or its equivalent, is compulsory.

Candidates for M.A. with English as a major subject must take nine hours of lectures a week, six of which shall be selected from "Graduate Courses." Course 13, or its equivalent, is compulsory.

Candidates for M.A. with English as a minor subject must take three hours of lectures a week, exclusive of 1 to 4.

DEPARTMENT OF GEOLOGY AND MINERALOGY.

PROFESSORS:—{FRANK D. ADAMS. J. AUSTEN BANCROFT.

ASSOCIATE PROFESSOR OF MINERALOGY:—R. P. D. GRAHAM.

LEROY FELLOW IN GEOLOGY:—ARTHUR W. CARLYLE.

SESSIONAL LECTURER:—JOHN A. DRESSER.

SESSIONAL LECTURER IN PALÆONTOLOGY:—TO BE APPOINTED.

1. **General Geology.**
   3 hrs. Mon., Wed., Fri., at 9..Professors Adams and Bancroft.
   Weekly excursions on Saturday mornings while the season permits; on their discontinuance, 2 hrs lab., Sat., at 10.
   Text-Book :—Cleland, Geology, Physical and Historical.

2. **Physiography.**
   2 hrs.....Professor Bancroft.
   Prerequisite:—1.

3. **Canadian Geology.**
   1 hr., 1st term.....Professor Bancroft.
   Prerequisite:—1.

4. **Historical Geology (Advanced).**
   1 hr.
   Prerequisite:—1.

5. **Mineralogy.**
   2 hrs.....Associate Professor Graham.

6. **Determinative Mineralogy.**
   2 lab. periods of 3 hrs. each during the first term.
   Associate Professor Graham.

7. **Ore Deposits.**
   4 hrs., 2nd term.....Professor Adams.

8. **Economic Geology.**
   1 hr., 1st term.....Professor Bancroft.

9. **Optical Mineralogy and Crystallography.**
   2 lab. periods, 1st term.
   2 Hours to be arranged.....Associate Professor Graham.

10. Petrography.

1 hr., 1st term; 1 lab. (3 hrs.) sess.....

Professor Bancroft and Associate Professor Graham.

11. Advanced Petrography.

Laboratory work—all hours to be arranged....Professor Bancroft.

12. Palæontology.

2 hrs; 3 hrs. lab. All hours to be arranged.

13. Geological Colloquium.

One evening in alternate weeks (to be arranged).....

Professors Adams, Bancroft and Associate Professor Graham.

14. Geological Survey.

Two weeks at the close of the Third Year, or immediately before beginning the regular course of the Fourth Year.

Honour Course.

Second Year :—5 and 6.

Third Year :—1, 5, 6, 9; also Zoology 1 and Chemistry 1. If any of these courses have been already taken, equivalent courses will be assigned.

Fourth Year :— 2, 3, 4, 7, 8 and 10 to 14 inclusive; also Botany 2.

Graduate Courses.

See page 381.

DEPARTMENT OF HISTORY

PROFESSORS:— { BASIL WILLIAMS. C. E. FRYER.

ASSOCIATE PROFESSOR:— W. T. WAUGH.

1. **General History from Origins to 1100 A.D.** First Year.
   3 hrs.; Tu., Th., Sat., at 11 ..... Associate Professor Waugh.

2. **British and European History, 45—1603 A.D.** Second Year.
   3 hrs.; Mon., Wed., Fri., at 9 ..... Professor Fryer.

3. **British and European History, 1603 to the present day.** Third Year.
   3 hrs.; Mon., Wed., Fri., at 10 ..... Professor Williams.

4. **History of Canada and the United States.** Fourth Year.
   3 hrs.; Tu., Th., Sat., at 9 ..... Professors Williams and Fryer.

HONOUR COURSE.

Prerequisite;—History 1.

Second Year:

5. **Mediæval and Renaissance History.**
   3 hrs.; Tu., Th., Sat., at 9 ..... Professor Waugh.
   History 2, Economics 2, approved courses in French or German and in Latin or German.

Third Year:

6. **English Constitutional History.**
   3 hrs.; Mon., Wed., Fri., at 9 ..... Professor Waugh.

7. **European History, 1603-1784.**
   3 hrs.; Mon., Wed., Fri., at 12 ..... Professor Williams.
   An approved course in Economics, Latin, French or German and one of the special subjects named below.

Fourth Year:

8. **European History, 1784 to the present day.**
   3 hrs.; Mon., Wed., Fri., at 10 ..... Professor Fryer.

9. **European Colonization and Expansion.**
   (Omitted in 1922-23.)

History 4 and 6 and continuation of special subject chosen in the Third Year.

Special subjects:—

Life and Times of Hildebrand.
Henry II. of England.
The Treaty of Vienna.
Roman Law.
A Period or Aspect of Ancient History.
Life and Times of Chatham.
Federal Constitutions in the British Empire.

Note.—Text-books for the above courses will be found in a separate leaflet issued by the department.

Honour Course in History and another subject.

History Courses.—

Second Year: 2 and 5.
Third Year: 6 and 7.
Fourth Year: 6 and 8. 4 may be taken instead of one of these courses.

Graduate Course.

See page 375.

DEPARTMENT OF MATHEMATICS.

PROFESSOR:— J. HARKNESS.
ASSOCIATE PROFESSOR:—A. H. S. GILLSON.
ASSISTANT PROFESSOR:—T. H. MATTHEWS.

1. Ordinary Mathematics.

(a) Algebra:—2 hrs., 2nd term.....Assistant Professor Matthews.
(b) Geometry:—1 hr., 1st term.....Assistant Professor Matthews.
(c) Trigonometry:— 2 hrs., 1st term; 1 hr., 2nd term.....
Associate Professor Gillson.

Text-books:—Hall and Knight, Elementary Trigonometry; Carslaw, Plane Trigonometry; Hall and Stevens, School Geometry, Parts I-VI; Hall and Knight, Elementary Algebra; Bottomley, Logarithmic Tables.

2. Advanced Ordinary Mathematics.

(a) Advanced Algebra and Theory of Equations:—1 hr., 1st term; 2 hrs., 2nd term.....Professor Harkness.
(b) Geometry and Trigonometry and Modern Plane Geometry:— 2 hrs., 1st term; 1 hr., 2nd term....Assistant Professor Matthews.

Text-books:—Hall and Knight, Higher Algebra; Fine, College Algebra, Carslaw, Plane Trigonometry; Godfrey and Siddons, Modern Geometry.

3. Solid Geometry and Geometrical Conic Sections and Algebra.

(a) Solid Geometry and Geometrical Conic Sections:— 3 hrs. 1st term.
Assistant Professor Matthews.
(b) Algebra:—3 hrs., 2nd term.....

Text-book:—Hall and Knight, Higher Algebra.

4. Analytical Geometry and Infinitesimal Calculus.

(a) Analytical Geometry:—2 hrs., 1st term; 1 hr., 2nd term....
Associate Professor Gillson.
(b) Infinitesimal Calculus:—1 hr., 1st term; 2 hrs., 2nd term.....
Professor Harkness.

Text-books:—C. Smith, Conic Sections; C. A. Scott, Cartesian Plane Geometry, Part I, Analytic Conics; Lamb, Infinitesimal Calculus; Osgood, Calculus.

5. Spherical Trigonometry and Astronomy.

(a) Spherical Trigonometry; 1 hr., 2nd term.....
Assistant Professor Matthews
(b) Astronomy:—1 hr.....Associate Professor Gillson.

Text-books:—Murray, Spherical Trigonometry; Barlow and Bryan, Astronomy (London University Tutorial Press); Moulton's Astronomy.

Note:—Spherical Trigonometry may be taken separately from Astronomy by Students taking the double course in Arts and Applied Science.

6. **Analytical Geometry and Calculus** (for students in Chemistry).

3 hrs.....Assistant Professor Matthews.

Text-book:—Gibson's Elementary Treatise on the Calculus.

7. **Analytical Geometry of Three Dimensions; Curve Tracing.**

(a) Analytical Geometry of Three Dimensions: 2 hrs.....
Professor Harkness.

(b) Curve Tracing; 1 hr.....Professor Harkness.

Text-books:—C. Smith's Solid Geometry; R. J. T. Bell, Geometry of Three Dimensions; Fine and Thompson, Co-ordinate Geometry.

8. **Infinitesimal Calculus and Differential Equations.**

(a) Infinitesimal Calculus; 2 hrs.....Professor Harkness.

(b) Differential Equations; 1 hr.....Associate Professor Gillson.

Text-books:—Lamb, Infinitesimal Calculus; Forsyth, Differential Equations (Macmillan); Piaggio, Differential Equations (Bell).

9. **General Analysis.**

3 hrs.....Professor Harkness.

Text-books:—Hardy, Course in Pure Mathematics (Camb. Univ. Press); Carslaw, Introduction to Fournier's Series and Integrals (Macmillan); Byerly, Fournier Series and Special Harmonics.

10. **Theory of Functions and Higher Plane Curves.**

(a) Theory of Functions of a Complex Variable; 2 hrs.....
Associate Professor Gillson.

(b) Introduction to Theory of Higher Plane Curves; 1 hr.....
Associate Professor Gillson.

Text-books:—Whittaker and Watson, Modern Analysis; Appell and Lacour, Fonctions Elliptiques (Gauthier-Villars).

Honour Course in Mathematics and Physics.

Prerequisites:—Mathematics 2 or high standing in 1; Physics 1 or 2.
Second Year:—Mathematics 3, 4, 5; Physics 3, 4. (Chemistry and English recommended as other subjects to be chosen.)
Third Year:—Mathematics 7, 8; Physics 5, 6.
Fourth Year:—Mathematics 9, 10; Physics 7, 8.

Graduate Courses in Mathematics.

Courses 9, 10 are suitable for Graduate Students. The following additional courses are also offered:—

11. **The Differential Equations of Mathematical Physics.**

3 hrs.....Associate Professor Gillson.

12. **Selected Topics in the Theory of Functions of a Complex Variable.**
3 hrs.....Professor Harkness.

13. **Differential Geometry.**
3 hrs.....Professor Sullivan.

14. **Projective Geometry.**
3 hrs.....Assistant Professor Matthews.

15. **A special course for the year 1922-23 on the leading ideas of Einstein's Mathematical Analysis in the Generalized Theory of Relativity.** The first part of this course (of an introductory character) will deal with Non-Euclidean Geometry.
1 hr.....Prof. Harkness and Associate Professor Gillson.

DEPARTMENT OF MODERN LANGUAGES.

PROFESSOR:—H. WALTER.

ASSOCIATE PROFESSOR:—R. DU ROURE.

ASSISTANT PROFESSORS:—
- J. L. MORIN.
- E. T. LAMBERT.
- P. VILLARD.
- MLLE L. TOUREN.

LECTURER IN GERMAN:—MISS B. MEYER, M.A.

A.—French.

Owing to the position which this University occupies in the midst of a very large French-speaking population, there is a permanent demand for courses of a practical, conversational character. The Department profits by the co-operation of French church services, French newspapers, French theatres, French literary clubs, and public lecture courses in the French language.

1. **French Language.** First Year.

   3 hrs.; Section A, Mon., Wed., Fri., at 9. Section B, Mon., Wed., Fri., at 11.

   Associate Professor du Roure, Assistant Professors Morin, Villard and Touren, and Mr. Tyndale.

Texts :—Bouvet, French Syntax and Composition (Heath); Lavisse Histoire de France, Cours moyen; Mansion, Extracts for French Composition (Heath); Fabliaux et Contes du Moyen Age (Heath). (a) Ordinary Course.—Bazin, Six Contes choisis (Oxford); Hugo, Gavroche (Oxford); Maupassant, Huit Contes choisis (Heath); Labiche, Le Voyage de M. Perrichon (Holt); Maiot, Sans Famille (Heath); Poésies choisies. (b) Advanced Course.—Daudet, Lettres de mon moulin (Oxford); Racine, Andromaque (Ginn); Mérimée, Contes et Nouvelles (Oxford); Montesquieu, Lettres Persanes (Macmillan); Bowen, Modern French Lyrics (Heath).

2. **French Language.** Second Year.

   3 hrs.; Tu., Th., Sat., at 9

   Assistant Professors Morin, Villard and Touren, and Mr. Tyndale.

Texts :—Grandgent, French Composition (Heath); Corneille, Horace (Oxford University Press); Racine, Britannicus (Holt); Molière, Les précieuses ridicules (Heath); Vigny, Servitude et grandeur militaires (Oxford); Mansion, Littérature française.

3. French Language. Second Year. (Honour Course.)

3 hrs.; Tu., Th., Sat., at 11.....

Texts :—Seventeenth Century French Readings (Holt); Molière, Les précieuses ridicules (Heath); Voltaire, Zadig (Macmillan); Musset, Trois Comédies (Heath); Hugo, Ruy Blas; Bowen, Modern French Lyrics (Heath); Mansion, Littérature française.

Private Readings :— Pailleron, Le Monde ou l'on s'ennuie (Heath); Hugo, Notre-Dame de Paris (Ginn).

4. French Literature:—General Course to the end of the Seventeeth Century. Third and Fourth Years.

3 hrs.; Mon., Wed., Fri., at 10.....
Associate Professor du Roure and Assistant Professor Touren.

Texts :—Oxford Book of French Verse; Darmsteter, Morceaux Choisis du XVI siècle (Delagrave); Montaigne, Selections (Heath); Rabelais, Selections (Macmillan); French Prose of the XVIIth Century (Heath); Corneille, Polyeucte; Racine, Phèdre; Molière, Le Misanthrope; Mme. de la Fayette, Princesse de Clèves; Doumic, Histoire de la Littérature française.

Prose Composition :— (a) Ordinary Course.—Spiers, Graduated Course of Translation into French Prose (Simpkin, Marshall & Co., London) (b) Honour Course.—Nicholson and Brennan, Passages for Translation into French and German (Oxford University Press).

5. French Literature:—General Course, Eighteenth and Nineteenth Centuries. Third and Fourth Years.

3 hrs.; Mon., Wed., Fri., at 10.....
Associate Professor du Roure and Assistant Professor Touren.
(Given in 1923-24).

Texts :—Lesage, Gil Blas (Heath); Marivaux, Le jeu de l'amour et du hasard (Macmillan); Diderot, Selections (Heath); J. J. Rousseau, Selections; Voltaire, Prose Selections (Heath); Chateaubriand, René (Nelson); Beaumarchais, Barbier de Séville (Ginn); Flaubert, Trois Contes (Nelson); Hugo, Hernani; Balzac, Père Goriot; Sainte Beuve, Selections (Cambridge University Press); French Lyrics of the Nineteenth Century (Ginn); Doumic, Histoire de la Littérature française.

Prose Composition:—(a) Ordinary Course.—Spiers, Graduated Course of Translation into French Prose (Simpkin, Marshall & Co., London). (b) Honour Course.— Nicholson and Brennan, Passages for Translation into French and German (Oxford University Press).

N.B.—In order to be admitted to courses 4 and 5 a student must know French well enough to take lectures delivered in French and express himself in French with some fluency and correctness.

6. **Mediæval French Literature and Philology.** Third and Fourth Years. (Honour Course.)

2 hrs.; Th., Sat., at 10.....
(Given in 1923-24)

Texts :—Darmsteter, Cours de Grammaire Historique, Parts I and II, and Bartsch, Chrestomathie de l'Ancien Français.

7. **History of the French Novel.** Third and Fourth Years. (Honour Course).

3 hrs.;Tu., Th., Sat., at 10.....Associate Professor du Roure.

8. **History of the French Theatre.** Third and Fourth Years. (Honour Course.)

1 hr.; Mon., at 10.....Associate Professor du Roure. (Given in 1923-24).

9. **Evolution of the French Lyric.** Third and Fourth Years. (Honour Course).

1 hr.; Mon., at 10.....Associate Professor du Roure. (Given in 1924-25).

10. **French Commercial Course.** Second Year.

3 hrs.; Mon., Wed., Fri., at 10....Assistant Professor Villard.

Text :—Carroné, A New Course of Commercial French.

11. **French Commercial Course.** Third Year.

3 hrs.; Tu., Th., Sat., at 10.....Assistant Professor Villard.

Texts :—Janau, Commercial French Correspondence; Clerget, Manuel d'économie commerciale; Histoire de la littérature française au 19ème siècle.

12. **French Science Readings.** First Year, B.Sc. Course.

3 hrs., 1st term.....Assistant Professor Villard.

Text :—Bowen, A First Scientific French Reader (Heath).

Honour Course.

Prerequisite:—1.
Second Year:—2 and 3.
Third and Fourth Years :—4 and 7.

M.A. Course.

13. Comparative Literature (English Section, Course 18). Two hours weekly.

14. Versification, histoire et technique. One hour.

15. Histoire de la langue française depuis le XVIe siècle. One hour.

16. Histoire de la Comédie en France. Two hours.

17. Exercises pratiques. One hour.

Candidates taking French only will take all the above courses and also one of the courses 7, 8 or 9; those taking French as a major together with another subject as a minor will omit 13 and either 14 or 15; those taking French as a minor will take 16 and one of the one-hour courses.

Candidates who have not taken French Philology in their undergraduate course must take it as a part of their M.A. course, except when French is taken as a minor.

B.—German.

1. **German Language.** (Beginners' Course.)

3 hrs; Tu., Th., Sat., at 9.....

Texts :—Van der Smissen und Fraser, High School German Grammar (Copp, Clark Co.); Guerber, Märchen und Erzaplungen, Vol. I (Heath); Baker, German Stories (Holt).

Students intending to proceed to course 5 will be required to take a supplementary examination in September (for which no fee will be charged) covering the rest of the grammar and the following texts:—Riehl, Die vierzehn Nothelfer (A.B.Co.); Moser, Der Bibliothekar (Heath); Schrakamp, Ernstes und Heiteres (A.B.Co.). Arrangements will be made by which students will be enabled to do this work by correspondence. This examination will take place at the time of the regular supplemental examinations.

2. **German Language.**

3 hrs; Tu.,Th., Sat., at 9.....

Texts :—Van der Smissen und Fraser, High School German Grammar (Copp, Clark Co.); Nichols, Two German Tales (Holt); Freytag Die Journalisten (Ginn); Fulda, Talisman (Holt); Collmann, Easy German Poetry (Ginn, Ed. 1913); Horning, German Composition.

3. **German.** (Beginners' B.Sc. Course.)

3 hrs; Tu., Th., Sat., at 10.....Assistant Professor Lambert.

Texts:—Sheldon's Short German Grammar (Heath); Guerber's Märchen und Erzäplungen, Vol. I (Heath); Gore's German Science Reader (Heath).

4. German Science Reading Course. Second Year.

3 hrs.; Mon., Wed., Fri., at 5.....Assistant Professor Lambert.

A course in reading Science German is given for students who have matriculated in this language or have taken it in the First Year. The text will be chosen to meet the requirements of the class.

5. German Language. Second Year.

3 hrs.; Mon., Wed., Fri., at 11.....

Texts :—Horning's German Composition (Copp, Clark Co.); Schiller, Wilhelm Tell (Holt); Goethe, Goetz von Berlichingen (Holt); Keller's Bilder aus der Deutschen Literatur (American Book Co., Ed. 1905).

6. German Language. Second Year. Honour Course.

3 hrs.; Mon., Wed., Fri., at 12.....Assistant Professor Lambert.

Texts :—Horning's German Composition (Copp, Clark Co.); Lessaing; Minna von Barnhelm ( ); Goethe, Hermann und Dorothe. (Ginn); Freytag; Doktor Luther (Ginn). Composition. Literature.

N.B.—In order to be admitted to the following courses a student must know German well enough to take lectures delivered in German and express himself in German with some degree of fluency and correctness.

7. German Literature (Nineteenth Century).

3 hrs.; Mon., Wed., Fri., at 3.....

Texts :—Kleist, Prinz Friedrich von Homburg (Ginn); Grillparzer Sappho (Ginn); Hebbel, Agnes Bernauer; Heine, Prose (Oxford Univ. Press); Heine, Verse; Hauptmann, Die versunkene Glocke; Keller, Sieben Legenden; History of Literature, Nineteenth Century (Kluge).

Prose Composition:—Wiehr, German Composition (Oxford).

8. German Literature (Eighteenth Century).

3 hrs.; Mon., Wed., Fri., at 3. (Given in 1923-24.)

Texts :—Lessing, Emilia Galotti (Ginn); Lessing, Nathan (A.B. Co.); Goethe, Iphigenie (Pitt Press); Schiller, Wallenstein's Tod; Collins, Selections from German Classics (Oxford Univ. Press); Kluge, Geschichte der deutschen Literatur. Prose Composition:—Wiehr, Prose Composition (Oxford University Press).

9. Mediæval German Literature and Philology. Honour Course.

2 hrs.; Mon., Wed., at 4 .....Assistant Professor Lambert.

Texts :—Bachhann, Mittelhochdeutsches Lesebuch (Fæsi und Beer Zürich); Behaghel; Die Deutsche Sprache (Freytag, Leipzig).

HONOUR COURSE.

10. Entwicklung der deutschen Lyrik.

1 hr.

11. Geschichte des deutschen Trauerspiels.

3 hrs. (Given in 1923-24.)

Prerequisite:—1 or 2.

Second Year:—5 and 6.

Third and Fourth Year:—7, 9 and 10.

The German language alone is used in class instruction, and, in order to obtain honours, candidates must be able to speak German fluently.

DEPARTMENT OF MUSIC.

PROFESSOR:—H. C. PERRIN.

Prerequisites:

(a) Evidence of having passed at least the Intermediate Grade of the McGill Local Examinations in Pianoforte or Organ, or in the case of a vocalist or violinist, evidence of sufficient ability to play pianoforte accompaniments of moderate difficulty. In every case there will be an additional preliminary ear test and also a sight reading test at the keyboard.

(b) Evidence of having passed the Junior Grade of the McGill Local Examinations in Theoretical Music.

1. (a) Musical dictation and ear training, rhythm and sound studied separately and together (stimulation of musical perception); acquaintance with the compass and use of orchestral instruments.

1 hr.

(b) History of Music from 1650 to 1850, combined with analytical study of works by composers from Corelli and Scarlatti to Beethoven, embracing the suite, lied, rondo, sonata, overture quartet, fugue concerto.

2 hrs.

Text-books:—Scientific Basis of Music, Stone (No. 11, Novello's Music Primers); Musical Dictation, Parts I & II, Ritter (Nos 29 & 30, Novello's Primers); Harmony and Ear Training, W. A. White (Silver, Burdett, & Co.); Music and Its Appreciation, Macpherson (Williams); History of Music, Baltzell (Theodore Presser & Co., Philadelphia); Studies in Phrasing and Form, Macpherson (Williams); Musical Forms, Pauer (Novello Primer No. 7); .

For Collateral Reading:—Studies of the Great Composers, Parry (Routledge); Beethoven and His Forerunners, D. G. Mason (Macmillan); Listener's Guide to Music, P. A. Scholes (Oxford University Press); How to Appreciate Music, Kobb (Sisley's Ltd.)

2. (a) Analytical Harmony in continuation of the previous year.

1 hr.

(b) History during the first part of Session, the early period, i.e. before 1650, and during the second part of the session, the period from the beginning of the 19th century to the present day.

1 hr.

(c) Study of composition (in continuation of (b) in previous year); comparison of styles; discussion of symphony, symphonic poem, dramatic music; discussion of principles of art and their application to music, especially as regards such points as unity, variety, contrast, proportion, symmetry and progress; the literature of music and literature on the subject of music.

Text-books:—Musical Dictation Part II, Ritter (No. 30, Novello's Primers); Harmony and Ear Training, W. A. White (Silver, Burdett & Co.); Art of Listening to and Appreciation of Good Music, Dickinson (Scribner); Form in Music, Macpherson (Williams); History of Music, Baltzell (Theo. Presser & Co., Philadelphia); History of Music, Stanford-Forsyth (Macmillan);

For Collateral Reading:—Genesis of Art, Raymond; Philosophy of the Beautiful, Knight; Various Articles in Grove's Dictionary; Evolution of Harmony, Kitson (Clarendon Press); Sonata Form, No. 54, Novello's Primers; Art of Music, Parry; Naermann's History of Music; Threshold of Music, Wallace; From Grieg to Brahms, D. G. Mason (Macmillan); The Romantic Composers, D. G. Mason (MacMillan); Phases of Modern Music, L. Gilman (J. Lane).

DEPARTMENT OF ORIENTAL (SEMITIC) LANGUAGES.

PROFESSORS:— {C. A. BRODIE BROCKWELL.
A. R. GORDON.

ASSISTANT PROFESSOR:—G. ABBOTT-SMITH.

LECTURER:—W. C. GRAHAM.

1. **Hebrew Grammar, Composition, and Selected Biblical Texts.**
3 hrs. Mon., Wed., Fri., at 12.....Professor Brockwell.

2. **Hebrew Grammar, Syntax, and Selected Biblical Texts.**
3 hrs.; Tu., Th., Sat., at 9... Professor Brockwell and Mr. Graham.
Prerequisite:—1.

3. **Literature of the Jewish Hellenists;** Prophetic (Greek) Texts.
3 hrs.; Mon., Wed., Fri., at 2;...Assistant Professor Abbott-Smith.
Prerequisite:—Greek 2.

4. **Grammar and Syntax of Jewish Hellenistic Texts.**
1 hr.; Tu., at 12.....Assistant Professor Abbott-Smith.
Prerequisite:—Greek 2.

5. **The Critical Value of Hellenistic Translation Texts.**
1 hr.; Wed., at 3.....Assistant Professor Abbott-Smith.
Prerequisite:—Greek 2.

6. **Literature of the Jewish Hellenists:** Prophetic (Hebrew) texts.
1 hr.; Mon., at 3.....Professor Gordon.
Prerequisite:—1.

7. **Hebrew Texts.**
3 hrs.; Mon., Wed., Fri., at 9...Professors Brockwell and Gordon.
Prerequisite:—1.

8. **Arabic, and either Aramaic or Syriac, or Phoenician, or Ethiopic, or Transliterated Assyrian Texts.**
3 hrs.; Mon., Wed., Fri., at 10.Professor Brockwell and Mr. Graham.

9. **Hebrew and Semitic Social Customs, Codes, and Institutions.**
3 hrs.; Mon., Wed., Fri., at 4.....Professor Brockwell.

10. **Hebrew History to the Age of the Mishnah.**
1 hr.; Fri., at 3..... Professor Gordon.

11. **Semitic Epigraphy, Including the History of the Alphabet.**
1 hr.; Tu., at 12.....Professor Brockwell.

12. **Hebrew Grammar, Syntax and Composition.**
1 hr.; Th., at 12.....Professor Brockwell.

13. **Semitic Comparative Philology**
1 hr.; Sat., at 12.....Professor Brockwell.

HONOUR COURSE.

Prerequisite:—Hebrew 1.
Second Year:—Consult the Head of the Department.
Third Year:—7, 8, 9, 10 (or 5), 11 and 12.
Fourth Year:—7, 8, 9, 5 (or 10) 11 and 13.

COURSES FOR THE M.A. DEGREE.

1. **Special Texts corrected with the Hebrew, or Aramaic, or Syriac, or Phœnician and Punic, or Arabic, or Ethiopic Texts, according to the nature of the Thesis.**
3 hrs.....
Professor Gordon or Assistant Professor Abbott-Smith or Mr. Graham.

2. **Synopsis of Semitic History with Special Reference to the History of the Period of the Thesis.**
1 hr.....Professor Gordon.

3. **Comparative Philology of the Semitic Languages.**
1 hr.....Professor Brockwell.

4. **North Semitic Epigraphy, including the History of the Alphabet.**
1 hr.....Professor Brockwell.

5. **Hebrew and General Semitic Social Customs, Institutions and Codes.**
1 hr.....Professor Brockwell.

6. **Hebrew and General Semitic Modes of Numerical Notation.**
1 hr.....Professor Brockwell.

7. **The Hebrew and General Semitic Science and Art of Mensuration, with Special Reference to the Measurement of Time.**
1 hr.....Professor Brockwell.

8. **General Contributions of Semitic Civilization to the Civilization of The West.**
1 hr.....Professor Brockwell.

9 **Grammar Syntax, and Lexicography of Jewish Hellenistic Texts.**
1 hr.....Assistant Professor Abbott-Smith.

10. **The Critical value of Jewish Hellenistic Translation Texts.**
1 hr.....Assistant Professor Abbott-Smith.

COURSES FOR THE PH.D. DEGREE.

Candidates for the Ph.D. degree may arrange with the Head of the Department for a continuation of the M.A. course during a period of two years.

DEPARTMENT OF PHILOSOPHY.

PROFESSOR:— W. CALDWELL. (On leave.)

ASSOCIATE PROFESSOR OF LOGIC AND METAPHYSICS:—

J. W. A. HICKSON.

ASSOCIATE PROFESSOR OF PSYCHOLOGY, AND DIRECTOR OF THE

PSYCHOLOGICAL LABORATORY:—WILLIAM D. TAIT.

LECTURER:—HARRY R. DESILVA, M.A.

For Undergraduates.

1. **Introduction to Psychology.**
   Lectures, class experiments and exercises.
   3 hrs. Mon., Wed., Fri., at 10.....Associate Professor Tait.
   Text-Book:—Woodworth, Psychology.

2. **Logic and Introduction to Philosophy.**
   3 hrs. Tu., Th., Sat., at 10.....Associate Professor Hickson.
   Text-books:—Sellar, Essentials of Logic; and Essentials of Philosophy.

3. **Moral Philosophy.**
   3 hrs. Mon., Wed., Fri., at 12.....Professor Mackay.

4. **Greek Philosophy.**
   3 hrs. (one term).....Professor Caldwell.

5. **History of Modern Philosophy.**
   3 hrs. Mon., Wed., Fri., at 4.
   1st term: From the Renaissance to Kant..Associate Professor Hickson.
   2nd term: From Kant to the Present Time.....Professor Caldwell.

6. **The Theory of Scientific Method.**
   3 hrs. Mon., Wed., Fri., at 12 ..... Associate Professor Hickson.

7. **Experimental Human Psychology, Experiments and Discussions—Introductory Laboratory Course.**
   3 hrs.....Mr. DeSilva.

For Undergraduates and Graduates

8. Advanced Moral Philosophy.
3 hrs. . . . . Professor Caldwell.

9. Theory of Knowledge and Metaphysics.
3 hrs. . . . . Associate Professor Hickson.

10. Main Currents of Contemporary Philosophy.
3 hrs. . . . . Associate Professor Hickson.
It would be advisable to take Course 5 with this, if it has not been taken previously.

11. Problem of Mind and Body, since 1600 A.D.
Lectures, Readings and Discussions,
2 hrs. . . . . Associate Professor Hickson.

12. Philosophy of Religion.
Lectures, Readings and Discussions,
2 hrs . . . . . Professor Caldwell.

13. The Critical Philosophy of Kant.
Lectures, Readings and Discussions,
2 hrs. . . . . Professor Caldwell or Associate Professor Hickson.
(In alternate years with Course 4.)

14. Social Psychology.
Lectures, prescribed readings and reports.
3 hrs. Tu., Th., Sat., at 10 . . . . . Mr. DeSilva.

15. Educational Psychology.
Lectures, prescribed readings and reports.
3 hrs. Mon., Wed., Fri., at 9 . . . . . Associate Professor Tait.

16. Advanced Psychology.
Lectures, prescribed reading and a thesis.
3 hrs. Tu., Th., Sat., at 9 . . . . . Associate Professor Tait.

17. Experimental Human Psychology.
3 hrs. Tu., Th., Sat., at 12 . . . . . Associate Professor Tait.

18. Advanced Laboratory Course, including mental measurements.
(Not given in 1922-23.) Associate Professor Tait.

Abnormal Psychology.
As in Fourth Year Medicine . . . . . Mr. DeSilva.

HONOUR COURSE.

Second Year:—1 or 2.

Third Year:—Any three full courses from 4 to 18 inclusive.

Fourth Year:—Any four full courses from 4 to 18 other than those already selected. In addition, a course in any of the following subjects:—Education, History, Economics, English Literature, Physics, Physiology, Zoology.

The Philosophy requirements for honours in Philosophy and English and Philosophy and German are eight hours selected from 4 to 19 in each of the Third and Fourth Years.

Primarily for Graduates.

20. **Psychological Laboratory. (Double Course.) Experimental Investigations in Human Psychology.**
Associate Professor Tait and Mr. DeSilva.

21. **Seminary in Psychology.**
Subject: Psychology of Human Relations....Associate Professor Tait.

22. **Philosophical Seminary, Problem of Perception in Recent Philosophy.**
Lectures, papers and discussions..... Associate Professor Hickson.

23. **Ethical Seminary.**
Recent and Contemporary Ethical Theories.....Professor Caldwell.

DEPARTMENT OF PHYSICS.

DIRECTOR:— A. S. Eve.

PROFESSOR:—L. V. KING.

ASSOCIATE PROFESSORS:—J. A. GRAY. A. N. SHAW.

ASSISTANT PROFESSORS:—H. E. REILLEY. D. A. KEYS.

DEMONSTRATORS:—V. HENRY. G. H. HENDERSON. (absent) R. J. CLARK. E. S. BIELER (absent) L. A. SMITH. L. H NICHOLS. W. C. QUAYLE. M. CROWE. M. CAM. A. V. DOUGLAS. (absent). T. C. THOMPSON. A. MACPHERSON.

1. General Course.

3 hrs.; Wed., and Fri., at 2.; lab., Mon., 2-4..... Professor Eve.

Text-books:—Kimball's College Physics, (Holt); Laboratory Manuscripts (Renouf Publishing Co.).

2. Heat, Sound and Light.

3 hrs.; Tu., Th., at 11 (with course 311 Ap. Sc.); 2 hrs.; lab., Mon., Wed., or Fri., 11-1.....Associate Professor Shaw.

Text-books:—Duncan and Starling's Heat, Light and Sound (Macmillan); Laboratory Manuscripts (Renouf Publishing Co.).

3A. Electricity and Magnetism.

2 hrs.; Mon., Fri., at 11 (with course 315 Ap. Sc.); 2 hrs, lab. Tu., or Th. ,2-4).....Associate Professor Gray.

Text-books:—Duncan and Starling's Electricity and Magnetism (Macmillan); Laboratory Manuscripts (Renouf Publishing Co.).

3B. Statics and Hydrostatics.

1 hr.; Wed., at 11.....Professor Eve.

Text-book:—Loney's Statics and Dynamics (C.U.P.).

4. Dynamics.

2 hrs., 1st term; 1 hr., 2nd term. (A half course combined with Math. 5, to form a three hour unit), Tu., Th., Sat., at 9.
Professor Eve.

Text-books:—Loney's Statics and Dynamics (C.U.P.).

5A. Properties of Matter.

1 hr.; Sat., at 10. (also lab.).....Assistant Professor Keys.

Text-book:—Poynting and Thomson's Properties of Matter (Griffin).

5B. Statics, Dynamics of a Particle and Rigid Dynamics.

2 hrs.; Tu., Th., at 10.....Professor King.

Text-books:—Lamb's Statics and Lamb's Dynamics (C.U.P.).

6A. Electrical Measurements.

2 hrs.; Wed., Fri., at 9; 2 hrs. lab.; Wed., 2-6.Professor King.

Text-books:—Law's Electrical Measurements (McGraw-Hill).

6B. Light. (Replaced by 8B in alternate sessions.*).

1 hr.; Mon., at 9. (also lab.).....Associate Professor Gray.

Text-books:—Edser's Light (Macmillan); Wood's Physical Optics (Macmillan).

7A. Electromagnetic Theory.

1 hr.; Th., at 11.....Associate Professor Gray.

Text-books:—Sir J. Thomson's Elements of Electricity and Magnetism (C.U.P.).

7B. Mathematical Physics.

2 hrs.; Tu., Sat., at 11.....Professor King.

Text-book;—Houston's Introduction to Mathematical Physics. (Longmans.)

8A. Molecular Physics.

2 hrs.; Wed., Fri., at 9.....Associate Professor Shaw.

Text-book:—Crowther's Ions, Electrons and Ionizing Radiations (E. Arnold).

8B. Theory of Heat. (Replaced by 6B in alternate sessions.*)

1 hr.; Mon., at 9 (also lab.).....Associate Professor Shaw.

Text-book:—Preston's Theory of Heat (Macmillan).

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*Courses 6B and 8B will be given in alternate sessions as follows:—
6B in '22-'23, '24-'25, etc., and 8B in '23-'24, '25-'26, etc.

9. **Radioactivity.**
2 hrs., 2nd term; (also lab.).....Professor Eve.
Text-book:—Rutherford's Radioactive Transformations (C.U.P.).

10. **Vector Analysis.**
2 hrs., 1st term.....Professor Eve.
Text-book:—Coffin's Vector Analysis (Wiley).

11. **Advanced Statics, Dynamics, Hydrodynamics and Sound.**
2 hrs.....Professor King.
Text-books:—Lamb's Higher Mechanics (C.U.P.); Bassett's Hydrodynamics and Sound (Deighton Bell).

12. **Kinetic Theory of Matter, and Electron Theory.**
2 hrs.....Professor King.
Text-books:—Jeans' Dynamical Theory of Gases (C.U.P.).
and Richardson's Electron Theory of Matter (C.U.P.).

13. **Quantum Theory and Relativity.**
1 hr.....Professor Eve.

14. **Advanced Electricity and Magnetism.**
2 hrs.....Professor King.
Text-book:—Jeans' Electricity and Magnetism (C.U.P.).

Honour Course in Mathematics and Physics.

Prerequisites:—Mathematics 2; Physics 1 or 2.
Second Year:—Mathematics 3, 4, 5*; Physics 3, 4,*; (Chemistry and English recommended as other subjects to be chosen.)
Third Year:—Mathematics 7, 8; Physics 5, 6.
Fourth Year: —Mathematics 9, 10; Physics 7, 8.

Graduate course in Physics.

As major:—Courses selected from 9-14, research thesis, etc.
As minor:—Courses selected from 5-9. (A general paper on elementary Physics must be taken also at the conclusion of the course).

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*Mathematics 5 and Physics 4 are half-courses.

DEPARTMENT OF SOCIAL SCIENCE

ASSISTANT PROFESSOR AND DIRECTOR OF SOCIAL SERVICE:—
CARL ADDINGTON DAWSON

1. **Introduction to the Study of Society.—**
Society and the Group; social interaction and the nature and effects of Communication; social forces, simple and complex; competition and individual location in Society; racial and cultural conflicts; social control; collective behavior.
Second Year 3 hrs; Mon., Wed., Fri., at 2 Assistant Professor Dawson.

2. **Social Pathology.—**
Dependency (including poverty); defectiveness; degeneracy; social variation; social unrest and disorder; the pathology of play and amusements; social disorganization and reorganization; crime and its treatment; delinquency and the gang.
Third and fourth year, 1st. term, 3 hrs Mon., Wed., Fri., at 3 Assistant Professor Dawson.

3. **The Community.—**
A study of the fundamental nature of the Community (urban and rural) and social organization and the underlying forces which produce them; the character of different communities and neighborhoods; groups, organizations and their connection with one another (presented by means of maps, case studies and concrete investigations); comparison of rural and urban communities and their modifications in modern development.
Third and fourth years, 2nd term 3 hrs; Mon., Wed., Fri., at 3 Assistant Professor Dawson.

DEPARTMENT OF ZOOLOGY.

PROFESSOR:—ARTHUR WILLEY.

ASSISTANT PROFESSOR:—J. STAFFORD.

LECTURER:—

0. **Comparative Anatomy.**
As in First Year Medicine.

1. **Elementary Zoology.**
3 hrs., 1st term; Mon., Wed., and Fri., at 11....Professor Willey.
4 hrs. lab.; Wed., and Fri., 2.

2. Zoology of Invertebrata.*

2 hrs.; Mon., Wed., at 5.....Assistant Professor Stafford.
4 hrs. lab. Wed., Fri., at 2.

3. Historical Zoology.

1 hr.; Fri., at 5.....Professor Willey.

4. Zoology of Vertebrata.

3 hrs.; Mon., Wed., Fri., at 10.....Professor Willey.
4 hrs. lab.; Tues., and Thu., at 2.

5. Comparative Embryology.

3 hrs., 2nd term; Mon., Wed., Fri., at 11.....Professor Willey.
4 hrs lab.; Wed., Fri., at 2.

6. General Zoology.

HONOUR COURSE IN BIOLOGY.

Prerequisites:—Botany 2, Chemistry 1, Zoology 1.
Second Year:—Botany 3, Zoology 2, with at least Physics 1, or Chemistry 2 or their equivalent.
Third Year:—Botany 4 and 6; Zoology 3 and 6.
Fourth Year:—Botany 7 and 8; Zoology 4 and 5.

THE TRAINING OF TEACHERS.

THE HIGH SCHOOL DIPLOMA.

The Protestant Central Board of Examiners of the Province of Quebec have laid down the following requirements for the High School Diploma:—

1. Graduation from some Canadian or other British University with degree courses that are considered by the Central Board satisfactory preparation for the work of the teacher.

2. The successful completion of courses 1 and 2 in the Department of Education.

3. The possession of the Strathcona Certificate, Grade B, after completion of a course in physical training. Full particulars on page 404 Miss Cartwright, Dr. Lamb.

4. Successful completion of at least fifty half-days of practice teaching and criticism lessons under expert supervision (unless the candidate holds an intermediate diploma or shows an equivalent in successful teaching experience which would be accepted by the Central Board).

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*This is a prerequisite for students who may hereafter wish to undertake zoological work at the Marine Laboratories under the Biological Board of Canada.

Candidates for this, the highest teaching diploma of the Province, are recommended to take courses 1 and 2 in the Department of Education during the last two years of their undergraduate course, preferably Course 1 in the Third Year and Course 2 in the Fourth Year.

ELEMENTARY, INTERMEDIATE AND KINDERGARTEN DIPLOMAS.

The training for these diplomas is given at Macdonald College. (See Macdonald College Announcement.)

COURSES FOR TEACHERS OF SPECIAL SUBJECTS.

French. A summer school for teachers of French leading to a Specialist Diploma recognized by the Council of Public Instruction.

Kindergarten Assistants. A two-session course held in Montreal and leading to a Kindergarten Assistant's Diploma, according to the regulations of the Protestant Committee of the Council of Public Instruction This diploma is accepted for entrance to the Kindergarten class at Macdonald College. (The course is conducted by the School for Teachers, Macdonald College.)

Particulars of the above courses, which are published separately, may be obtained on application to the Registrar.

Physical Education. A two-years' course leading to a diploma for Teachers in Physical Education recognized by the Council of Public Instruction. (This course is given under the Department of Physical Education.)

EXAMINATION TIME TABLES—Faculty of Arts.

SCHOLARSHIP AND SUPPLEMENTAL EXAMINATIONS, SEPTEMBER, 1922.

DATE.	Hour.	Supp. to First Year Sessional.	Second Year Scholarships.	Supp. to Second Year Sessional.	Scholarships (Third Year).	Supp. to Third and to Fourth Year Sessional.*
Monday.....18	9.00	English, 1.	English Literature (Shakespere). History.	English, 3 & II Com.	English Literature (Shakespere and Milton).	English, 6.
	2.00	English, 2.	English Literature (Macaulay and Scott).	English, 4. Commercial Law (Neg. Instrs.)	English Literature (Ruskin and Arnold).	English, 13.
Tuesday.....19	9.00	Latin, 1. Economics, I Com.	Latin Books.	Economics, II Com.	Latin Texts.	French, 5.
	2.00	Econ. Geog. I Com.	Latin Composition, Sight Translation, and Roman History.	Latin, 2. Econ. Geog. II Com.	Latin Composition, and Sight, and Roman History.	
Wednesday...20	9.00	French, 1, 2,	French Texts.	French, 3, 4.	French Books.	French, 7, 8.
	2.00	History, 1. Commercial Law (Contracts)	German Texts.	Philosophy, 3. Physics, 2. Semitics, 2	French Composition and Sight	Physics, 6. Private and Int. Law.
Thursday.....21	9.00	Maths. 1 (Algebra).	Geometry and Trigonometry.	Maths. 3 (Algebra). History, 2. Business Orgn.	Animal Biology. Analytical Geometry and Trigonometry.	Maths. 6 (Anal. Geom). Economics, 10.
	2.00	Maths. 1 (Geometry). Geom. & Trig. I Com.	German Composition and Sight.	Philosophy, 1. Botany, 2	German Books. Plant Biology. Logic.	Education, 1 Botany, 7 (a). Chemistry, 4, 14.
Friday.....22	9.00	Maths. 1 (Trigonometry). Accountancy, I Com.	Greek Books, Algebra (Minor), Algebra and Theory of Equations. (Major).	Greek, 3 & 4. German, 4. Accountancy, II Com. Cal. for Chem.	Greek Texts. Physics. Psychology.	History, 3. Accountancy, III Com.
	2.00	Physics, 1.	Greek, Composition, Sight Translation, and History.	Philosophy, 2. Maths. II Com. Geology, 1.	Chemistry, Greek Composition, History and Sight Translation.	Chemistry, 3, 5.
Monday.....25	9.00	Greek, 1 & 2. German (1, (a), 1, (b), 2, 3). Spanish.	French Composition and Sight.	Maths. 3 (Conics and Solid Geometry). Economics, 1. Hist. of Commerce	Infinitesimal Calculus, German Comp. and Sight.	Chemistry, 2. History of Commerce
	2.00		Physics.	Chemistry, 1, & II Com.	History and English Composition. Philosophy (Berkeley).	Physics, 3.

*Periods for other subjects to be arranged at the time of the Examination.

EXAMINATION TIME TABLES.

FACULTY OF ARTS

FIRST TERM EXAMINATIONS, 1923.

	First Year	Second, Third and Fourth Years.
Tuesday, January 16, 1922—		
9-12 A.M.	Th. of Equations, 2 Geometry, 1.* Algebra (Com.)	Economics, 10.*
2-5 P.M.	Greek, 1 & 2. Physics, 1 (B.Sc. & Com.).	Physics, 4, English, 15.*
Wednesday, January 17—		
9-12 A.M.	English, 2 & Com.	Economics, 4.*
2-5 P.M.	Latin 1. Economics (Com.).	Physics, 10.*
Thursday, January 18—		
9-12 A.M.	German, 1, 2, 3. Accountancy.	Chemistry, 4.* English, 13.* Geology, 3.* Accountancy.
2-5 P.M.	History, 1. Geometry (Com.).	Geology, 1.
Friday, January, 19—		
9-12 A.M.	French, 1, 12.*	Economics, 14.* Chemistry, 2.
2-5 P.M.	Physics, 1 (B.A.). Zoology, 1. Spanish.	English, 19. * Chemistry, 1, 3 (a).*
Saturday, January 20—		
9-12 A.M.	Trigonometry, 1,2, & Com.	Chemistry, 14.* Geometry, 3.* Education, 1.*

Courses marked * are final.

EXAMINATION TIME TABLES

Faculty of Arts

Sessional Examinations 1923

Subject to Revision

Date	Forenoon	Afternoon
Tuesday, May 3rd	Botany, 4, 6, Chemistry, 7 Latin, 11 English, 16 Geology, 1 History, 2, 6 Mathematics, 1 (a), 2 (b) French, 1 Hebrew, 7 Philosophy, 15 Physics, 6A, 8A	Chemistry, 7 Latin, 11 English, 15, 16 Geology, 1 History, 2, 6 French, 1 Hebrew, 7 Philosophy, 15 Physics, 6 B
Wednesday, May 4th	Botany, 3 Greek, 11 English, 19 History, 4, 5 Mathematics, 5 (with Physics, 4), 8 French, 2 German, 1, 2 Hebrew, 2 Philosophy, 16	Botany, 3 Greek, 11 English, 19 History, 4, 5 Mathematics, 5 (with Physics 4), 8 French, 2 German, 1, 2 Hebrew, 2 Philosophy, 16
Thursday, May 5th	Chemistry, 5 Latin, 1 English, 6 History, 3, 8 Mathematics, 3 (b), 7 French, 4 Hebrew, 8 Philosophy, 1 Zoology, 4	Chemistry, 5 Latin, 1 English, 6 History, 3, 8 Mathematics, 7 French, 4 Hebrew, 8 Philosophy, 1 Zoology, 4
Friday, May 6th	Greek, 1, 5 English, 18 Mathematics, 10 French, 7 German, 3 Philosophy, 2, 14 Physics, 5	Greek, 1, 5 English 18 Mathematics, 10 French, 7 German, 3 Philosophy, 2, 14 Physics, 5
Saturday, May 7th	Greek, 2 Latin, 3 Economics, 1 English, 10 Mathematics, 1, 2 French, 1 German, 5 Physics, 3 Zoology, 5	Greek, 2 Latin, 3 Economics, 1 English, 10 Mathematics, 1, 2 French, 1 German, 5 Physics, 3
Monday, May 9th	Chemistry, 6 Greek, 4, 12 Economics, 11 English, 11 History, 1 French, 3 Physics, 2, 7	Chemistry, 6 Greek, 4, 12 English, 11 History, 1 French, 3 Physics, 2, 7

SESSIONAL EXAMINATIONS, 1923

DATE	FORENOON	AFTERNOON
	Philosophy, 3, 6 or 9 Physics, 3	Philosophy, 3, 6 or 9 Physics, 3
Wednesday, May 11th.....	Chemistry, 2 Latin, 2 Economics, 15 Mathematics, 4 Hebrew, 4, 11, 12, 13	Chemistry, 2 Latin, 2 Mathematics, 4 Hebrew, 4, 11, 12, 13
Thursday, May 12th.....	Botany, 2, 7 Economics, 3 English, 14 Hebrew, 3 Physics, 1 Mathematics, 6	Botany, 7 Economics, 3 Mathematics, 6 Hebrew, 3 Physics, 1
Friday, May 13th.....	Botany, 5 Chemistry, 1 Economics, 5 English, 4 German, 7, 8 Hebrew, 5, 6, 10	Botany, 5 Chemistry, 1 English, 4 German, 7, 8 Hebrew, 5, 6, 10
Saturday, May 14th.....	English, 9 German, 9, 10 Hebrew, 9 Philosophy, 5	English, 9 German, 9, 10 Hebrew, 9 Philosophy, 5
Monday, May 16th.....	Education, 2 German, 4 Zoology, 2, 3	German, 4
Tuesday, May 10th.....	Chemistry, 1 Latin, 12 Economics, 2 English, 1 History, 7 Mathematics, 9 German, 6 Hebrew, 1	Chemistry, 1 Latin, 12 Economics, 2 English, 2 History, 7 Mathematics, 9 German, 6 Hebrew, 1

DEPARTMENT OF COMMERCE

COURSE FOR THE DEGREE OF BACHELOR OF COMMERCE

The course extends over three years, and students who successfully complete it will be granted the Degree of Bachelor of Commerce (B.Com).

The curriculum is as follows:—

(The course in each subject occupies three hours per week throughout the session.)

First Year

Subject	Prerequisites
English	
Mathematics	
French or Spanish or German	
Accountancy	
Political Economy and Commercial Geography	
German or Spanish or French or Physics	

Second Year

English

Four of the following:

Accountancy

Mathematics

Economics and Commercial Geography

French or Spanish or German

German or Spanish or French

Commercial Law

Chemistry

THIRD YEAR.

Five of the following:

Accountancy (P.) (including Business Organization and Industrial Organization)	Second Year Accountancy.
Accountancy (Q.) (advanced)*	
French or Spanish or German†	
German or Spanish or French†	
Economics	Second Year Economics.
Economics (advanced)	
Actuarial Mathematics	Mathematics 2,3and4 of the Arts Course.
Statistics, Investigation Practice, Insurance	Second Year Mathematics.

VISITS TO FACTORIES FOR THIRD YEAR STUDENTS.

A number of visits will be arranged to important manufacturing concerns in and around Montreal.

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*Students who desire to take Accountancy Q. (advanced) in the Third Year must satisfy the following conditions:

(a) They must also take Accountancy P.

(b) They must have taken Mathematics in the Second Year.

(c) They must have obtained at least 65% at the examinations in Accountancy of the Second Year, or an average of at least 65% at the examinations in this subject of the First and Second Years together.

(Students failing to reach this 65% margin may present themselves again for examination at the September supplementals.)

†A language cannot be selected in the Third Year unless it had been taken in the two preceding years; a second language cannot be chosen unless it had been studied in at least one of the two preceding years.

DIPLOMA OF LICENTIATE IN ACCOUNTANCY.

To obtain the diploma of **Licentiate in Accountancy,** which carries with it right of entrance into the Association of Accountants in Montreal (Chartered Accountants), or into the Institute of Accountants and Auditors of the Province of Quebec, the student must satisfy the following conditions:—

(a) He must pass all the examinations required for, and leading up to, the Degree of Bachelor of Commerce.

(b) He must pursue the course of studies prescribed in this programme for Accountancy students.

(c) He must comply with all ordinances regulating the practical work to be done by students during the vacation.

(d) He must spend at least one year, subsequent to his obtaining the Degree of Bachelor of Commerce, in the office of a practising accountant.

(e) He must then pass successfully a Final Examination in Accountancy and Auditing before a board of five examiners, composed as follows: the Director-Secretary of the School of Commercial Studies, two Professors of McGill University, a member of the Association of Accountants in Montreal, and a member of the Institute of Accountants and Auditors of the Province of Quebec; or before a board composed of four examiners, in case either of the Associations mentioned fails, after due notice, to nominate its delegate; or before a board composed of three examiners, in case each of the Associations mentioned fails to nominate its delegate.

This examination will be held during the last week of the month of October each year.

COURSES OF LECTURES

ACCOUNTANCY

The accountancy work has been carefully graduated and correlated, and is intended not merely to fulfil its part in a general scientific business training, but also to prepare and assist those who purpose taking up accountancy as a profession.

No previous knowledge of bookkeeping is assumed or required; the subject is developed rapidly along the lines that prevail in practice.

FIRST YEAR.

The following plan will give a good indication of the ground covered in this Year:—

The principle of debit and credit; books of original record, how they should be kept, and how utilized; documents employed in connection with them; sales, purchases, consignments, and how to handle them; returns inwards and returns outwards; subsidiary ledgers, and controlling accounts to represent them in the general ledger; special forms of cash-book required to facilitate such control; notes and drafts, discounting and renewal of notes, and the proper methods of treating these operations in the accounts; single entry, how to change to double entry, and vice versa; distinction between revenue and capital expenditure; income statement and balance sheet; single proprietorships and partnerships.

The student will be required to sift and classify his detail, write up all the books of record and account mentioned, and focus results of the various transactions or operations into the final statements.

SECOND YEAR.

The subject matter for this Year will be as follows:—

Special Problems that occur in connection with Partnerships.—The deed of partnership; rights of partners; effects of dissolution; methods of distributing profits; the bringing in of other partners; goodwill; transformation of a firm into a corporation; departmental accounts; organization and records required; sectional balancing of ledgers and systems of internal check; analysis of expenses; distribution of expenses over departments; results in each department; comparison of these results with those shown in other periods; manufacturing accounts; the elements of cost accounting; records to take care of purchases; the voucher system; depreciation and methods of providing for it; allowances and reserves; sinking funds.

THIRD YEAR

The work of the Third Year will embrace:—

(*1*) *Course P—for all Students.*

(a) Theory of the Balance Sheet.—Its form and elements; valuation of these elements; comparative balance sheets and deductions to be drawn from them; double account system ; the income statement.

(b) Corporation Finance.—Development of the corporation; status and interior organization of the corporation; how to incorporate; different classes of corporation; promotion and underwriting; stock and bond issues; temporary loans; initial operations; earnings and their disposition; secret reserves; betterments; surplus; control exercised by directors and majority stock-holders; its abuse; consolidations; insolvency; re-organizations; different bases of capitalization; problems connected with stock and bond issues; bonus stock; treasury stock; watered stock; discount and premium on bond issues.

(c) Export Houses.—Records and Accounting system required.

(d) Cost Accounting.—General considerations; advantages of cost systems.

(*2*) *Course Q.*—(Intended especially for students proceeding to a Diploma in Accountancy, although this course may be taken by all students who have reached the required standard.)

Cost Accounting.—Control of stores, purchasing and issuing, the running inventory; quality, remuneration , and control of labour, different methods of distributing overhead expenses or "burden" and their limitations; calculation of machine-rates; waste and leakage in factories; idle-time; forms used in different "job and process" costing systems; how selling price is computed; connection of cost records with general accounts.

Branches, Consolidations, Mergers.—Accounts of head office and of branches; consolidated statements and balance-sheets; holding corporations; control of stock and bond issues; minority holdings; advances to subsidiaries; inter-company profit; capital assets and capital liabilities; initial surplus and goodwill.

Insolvency Accounts.—Various schedules adopted; statements of affairs; realization and deficiency account; deficiency statement.

Auditing.—Considerations applicable to all undertakings, and special considerations applicable to particular concerns; laboratory practice in auditing.

Trustees' Accounts.—Executorships and administratorships; accrued claims; accrued expenses; corpus and income.

Accounting in Insurance Companies.—General considerations; systems used.

Bank Accounts.—General considerations.

Municipal Accounts.—General considerations.

Peculiarities in the form of accounts required in other undertakings.

BUSINESS ORGANIZATION.

Origin and growth of business organization.—Different methods in which business organization may be classified; useful inferences to be drawn from each method of classification; tests of efficiency in business organizations; social, economic and legal aspects of the following types of organization:—the Single Proprietorship; the Partnership; the Joint-stock Company; the Corporation; Agreements, Pools; Kartells; Simple Business Trusts; Combination Trusts; Community-of-interest Organizations; Securities-holding Organizations, Amalgamations and Mergers.

CHEMISTRY.

The course includes a study of the more important elements and compounds, the general laws and principles and the fundamental theories of the science; with as many industrial applications as time will allow. The lectures are illustrated with specimens, experiments, diagrams, lantern-slides, etc. The general intention of the course is to give a thorough training in the basic principles of the science and their applications, so that chemical problems arising in connection with future work and study may be intelligently considered.

Text-book :—McPherson and Henderson, "A Course in General Chemistry."

COMMERCIAL LAW.

The lectures on commercial law will be designed to render service to the business man, the banker, and the accountant, in their everyday transactions, and to instruct students who may be preparing for the examinations held in connection with the Association of Accountants in the Province of Quebec. The subjects will be treated from the point of view of the business man rather than from that of the lawyer.

A course of 25 lectures will be given on the general principles of the law of contract. These will include the formation, interpretation, operation and discharge of contracts, and the remedies for breach. Special reference will be made to certain particular contracts, such as sale, partnership, agency, etc.

Courses of 25 lectures each will be given in the Second and Third Years. One course will deal with the law of corporations (Dominion and Provincial), including winding-up. The other course will deal with the law governing negotiable instruments and banking transactions. Each course will include an exposition of the relevant statutes. Attention will be drawn to any important differences between the law of Quebec and that of the rest of Canada.

ECONOMICS.

1. Elements of political economy.
2. Exchange (theory of value, money, foreign exchanges and international trade).
3. Distribution (theory of rent, interest, wages, population, taxation and social legislation).

ADVANCED ECONOMICS.

Students of the Third Year may select in addition to Course 2 or 3, any approved three-hour course in the Department of Economics in the Faculty of Arts.

ECONOMIC GEOGRAPHY.

FIRST YEAR.

General.—The solar system; epochs in the history of the earth; divisions of the earth's surface into land and water; elements of geology; effects of sun's heat and rays; effects of altitude; effects of moisture, temperature and winds; ocean currents; mankind, races and characteristics; distribution of natural products; centres of population, and reasons for their development; chief commercial products; chief traffic channels and movements.

Canada.—General configuration; climatic conditions; natural products—agriculture, animal products, products of the mine, of the sea, of rivers; population centres, their history and growth.

Canadian Production for Home Consumption.—Location of important industries, with reasons; markets; means of distribution; cost of distribution; means of improvement and development of established industries; means of creating new industries.

SECOND AND THIRD YEARS.

Canadian Export Trade.—Production for export; raw materials; manufactured products; foreign markets; means of creating new markets; nature of Canadian export markets—distance, climate, population, habits, credit, currency, government, tariffs, transport facilities, competition.

Canadian Import Trade.—Products imported; countries of origin; purposes for which employed; direct consumption, further manufacture; reimportation of Canadian raw materials manufactured abroad.

Economics of Transport: Water Transport.—Ocean shipping; services, rates and organization; shipping policies of leading commercial nations; internal water transport in North America.

Economics of Transport: Land Transport.—Organization and service of railway traffic departments; systems of rates; car service; demurrage and claims; legislative regulation; motor transport; light railways.

ENGLISH

The fundamental purpose of the course in English is to train students to deal with such problems of expression as arise in commercial life. Considerable attention will be given to business correspondence and other forms of commercial writing. The interests of students, however, are best served, even for these special purposes, by a more general training in English. These courses will, therefore, include practice in various kinds of writing, as well as a study of English literature, in which a large amount of reading is required. As far as possible, the writing prescribed for students will be related to the work they are doing in other classes.

The following is a brief outline of the work:—

FIRST YEAR.

English 1. English Composition, one hour a week. Weekly individual conferences with the instructor are required. Mr. Noad.

English 2. English Literature, as prescribed for students in the Faculty of Arts,—a general outline course from Chaucer to Kipling. Readings and fortnightly individual conferences. Two hours a week. Associate Professor Macmillan and an assistant.

SECOND YEAR.

English Composition

English Literature, with special reference to the literary treatment of commercial and industrial problems and theories.

FRENCH.

The study of French will be first approached from the literary side, both in order to increase its value to the student as an element of culture and in order to afford a sufficient background for the commercial studies which are to come later. These commercial studies will begin in the Second Year, and will comprise about half of the work done in that Year. In the Third Year the work will be almost entirely of a commercial character.

The following is a synopsis of the work:—

FIRST YEAR.

The student will have a choice between:—

(a) The Advanced Arts Course in French and (b) The Ordinary Arts Course in French, strengthened by tutorial class work.

SECOND YEAR.

In this Year the work will be divided into two sections:—

I. A selected Arts course.

II. Work of a commercial nature, embracing:—

Commercial Correspondence:—Letters of introduction, offers of services, inquiries, acceptance of offers, execution of orders, circulars, invoices and account sales; study of trade reports and commercial documents; study of contracts—bills of sale, mortgage deeds, bills of lading, charter-party, insurance contracts.

THIRD YEAR.

During this Year one hour a week will be devoted to a study of modern French literature The remaining three hours will be taken up with commercial work, which may be conveniently divided into—

(a) Commercial correspondence, study of trade reports, etc., in continuation of work begun in the Second Year; and (b) colloquial French.

(The text-book to be used for this part will be P. Clerget, Manuel d'économie commerciale.)

GERMAN.

The study of German will extend through all three Years.

FIRST YEAR.

Course 1.—For beginners (the B.A. Course) (See Arts Bulletin.)

OR

Course 2.—For those who have matriculated in German.

SECOND YEAR.

Course 5.—(See Arts Bulletin.)

THIRD YEAR.

Course 7, or Course 8.—(See Arts Bulletin.)

INDUSTRIAL ORGANIZATION.

A course of lectures for the Second and Third Years and dealing with the following subject matter—

The launching of an industrial enterprise; the planning of a factory; departmental function; the purchase and control of raw materials; labour, and its control; wage systems; welfare work; power and its transmission; the reorganization of a factory; the committee system; the location of industries; principles of management; types of management; departmental relations; standardization and equipment; standardized operations; written standard-practice instructions; adequate records; efficiency rewards.

INSURANCE

A course of lectures on Insurance for Third Year students.

MATHEMATICS.

(Elementary Course.)

FIRST YEAR.

In this Year the work will be that prescribed for First Year Arts students and will afford a sound training in general mathematics.

SECOND YEAR.

The Mathematical theory of Investment:—Interest, annuities, amortization, sinking funds and depreciation, bonds, building and loan associations.

(Advanced Course.)

FIRST YEAR.

Advanced Ordinary Mathematics (Mathematics 2) of the Arts Course (including Advanced Algebra and Theory of Equations).

SECOND YEAR.

Solid Geometry, Geometrical Conic Sections and Algebra (Mathematics 3); Analytical Geometry and Infinitesimal Calculus (Mathematics 4).

(Students taking this course may, if it is found desirable, be exempted from the following subjects of the Second Year Commerce Course.—The Mathematical Theory of Investment; Industrial Chemistry; Economic Geography and History of Commerce.)

THIRD YEAR.

Finite Differences; Advanced Theory of Finance; Life Contingencies, including Life Annuities and Assurances and the construction and use of the Life Table, monetary and other tables based thereon.

PHYSICS.

The course in Commercial Physics consists of two lectures and a two-hour laboratory period each week. The object of the course is to introduce the students to the various laws and principles of physics and to make them familiar with the principles underlying the appliances and phenomena of every-day life. In the laboratory the students are required to make measurements and observations under the guidance of instructors. The following headings are indicative of the nature of the course given:—

Simple machines; mechanics of liquids and gases; elasticity and strength of materials; accelerated motion; force; energy; momentum; effects of heat; heat engines; a history of the developments in magnetism

and electricity; battery currents; induced currents; electric power; alternating current machines; sound production and transmission; sound phenomena; sound as related to music; lamps and reflectors; lenses and optical instruments; spectra and color phenomena; Roentgen rays and electric waves in general.

SPANISH.

The study of Spanish will extend through all three Years, and will first be approached from the literary side. In the Second and Third Years increasing weight will be given to commercial matters.

The following text-books will be used:—

FIRST YEAR

Coester's Spanish Grammar (Part II) (Ginn & Co.); Loiseaux, Spanish Composition (Silver, Burdett & Co.); Quintana, La vida de Blasco Nuñez de Balboa (Ginn & Co.); Valera, El pájaro verde (Ginn & Co.); Pardo Bazán, Pascual Lopez (Ginn & Co.).

SECOND YEAR

Cool's Spanish Composition (Ginn & Co.); Spanish Humour in Story and Essay (Ginn & Co.); Moratin, El si de las Niñas (Ginn & Co.); Cervantes, Don Quixote (selections from) (Heath & Co.); Hartzenbusch, Los Amantes de Teruel; History of Spanish Literature (Period of the Catholic Kings.)

Students must also provide themselves with Romero-Navarro's "Manual del Comercio."

THIRD YEAR

Spanish Composition, Cool (Ginn & Co.); Oxford Book of Spanish Verse (selections); Cervantes, Los novelas ejemplares (selections); Garcilasso de la Vega (selections); Becquer, Legends, tales and poems (Ginn & Co.); Espronceda, El estudiante de Salamanca, and other selections (Ginn & Co.); Echegaray, Locura o Santidad and La duda; La grandeza y decadencia de España; D. Felipe Picatoste, History of Spanish Literature from the Roman period to the Catholic Kings.

(Additional books will be prescribed.)

STATISTICS (25 LECTURES)

Scope and meaning of statistics; method and application; groups and series and their graphic representation; sources of data required in statistics; averages—arithmetic, weighted, geometric, the mode, the median, empirical formulae; interpolation—elementary formulae in finite differences; applications to problems of trade, production, population (mortality table), etc.; elements of the theory of correlation and calculation of the coefficient of correlation; business barometers.

Text-books:—Secrist; Bowley; Jones; Elderton.

SCHOOL OF COMMERCE LECTURE TIME-TABLE.

SESSION 1922-23.

Hour	Year	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
9	1	Maths. 2 (sp) (A.108) French, Sect. I. (A.115) Maths. Sect. I (A.107)	German (A. 114)	Maths. 2 (sp) (A.108) French, Sect. I (A.115) Maths. Sect. I (A.107)	German (A.114)	Maths. 2 (sp) (A.108) French Sect. I (A.115) Maths. Sect. I (A.107)	German (A.114)
	2	Accountancy (A.100)	English (A.5)	Accountancy (A.100)	English (A.5)	Accountancy (A.100)	English (A.5)
	3	Spanish (A.110)	Accountancy (P) (A.100)	Spanish (A.110)	Acct. (P) (A.100)	Spanish (A.110)	Acct. (P) (A.100)
10	1	Accountancy (A.100)	Spanish (A.110)	Accountancy (A.100)	Spanish (A.110)	Accountancy (A.100)	Spanish (A.110)
	2	French (A.115) Maths. 3 (sp) (A.108)	Maths. (A.3)	French (A.115) Maths. 3 (sp) (A.108)	Maths. (A.3)	French (A.115) Maths. 3 (sp) (A.108)	Maths. (A.3)
	3		French (A.100)		French (A.100)		French (A.100)
11	1	French Sect. II (A 114) Maths. Sect. II (A.100)		French, Sec. II, (A.115) Maths. Sec. II (A.100)		French, Sec. II (A.115) Maths. Sec. II (A.100)	Physics (Ph.)
	2	German (A.114)	Spanish (A.108)	German (A.114)	Spanish (A.108)	German (A.114)	Spanish (A.108)
	3	Econs. (A.3) Econs. (A.3)	Statistics (A.5)	Econs. (A.3) Econs. (A.3)	Inv. Pr. (A.5)	Econs. (A.3) Econs. (A.3)	Insurance (A.5)
12	1	English (Biol.)	Economics (A.105)	English (Biol.)	Economics (A.105)	English (Biol.)	Economics (A.105)
	2		Maths. 4 (sp) (A.108)		Maths. 4 (sp) (A.108)		Maths. 4 (sp) (A.108)
	3	Acct. (Q) (A.100)		Acct. (Q) (A.100)		Acct. (Q) (A.100)	
2	1		Special and Tutorial Classes		Special and Tutorial Classes		
	2						
	3	Adv. Econs. (A.5)		Adv. Econs. (A.5)		Adv. Econs. (A.5)	
3	1						
	2						
	3	Chemistry (C) Adv. Econs. (A.5) German (A.114)		Chemistry (C) Adv. Econs. (A.5) German (A.114)		Chemistry (C.) Adv. Econs (A.5) German (A.114)	
4	1						
	2				Physics (Lab.) (Ph.)	Physics (Ph.)	
	3						
5	1				Physics (Lab.) (Ph.)	Physics (Ph.)	
	2						
	3	Com. Law (A.115)		Com. Law (A.115)		Com. Law (A.115)	

A.—Arts Building. Numeral indicates number of room. Biol—Biological Building. C,—Chemistry Building. Ph.—Physics Building.

DEGREES, EXAMINATIONS AND SOCIETIES

1. DEGREES.

The degrees conferred by the University upon such undergraduates of the Facualty as fulfil the conditions and pass the examinations hereinafter stated are "Bachelor of Architecture" (B.Arch.), and "Bachelor of Science" (B.Sc.), mention being made in the diplomas of the latter of the particular course of study pursued.

Students who take the Bachelor of Science degree in one of the courses provided by the Faculty may graduate in any of the remaining courses by attending one or more subsequent sessions and passing the prescribed additional examinations.

Students who wish to obtain the degrees of B.A. and B.Sc. (Applied Science) in six years, will spend the first three years in Arts before attending any classes in Applied Science, except the First Year courses in Applied Science which are not included in the Arts curriculum; they will then enter the Faculty of Applied Science and devote the remaining three years entirely to the work of this Faculty. The special courses referred to will be taken as can conveniently be arranged.

Every student who intends to take this double course must notify the Dean of the Faculty of Applied Science to this effect on or before the close of his First Year in Arts and must obtain full particulars of the special work to be done and the fees to be paid.

By a resolution of the Institution of Civil Engineers (England) the holders of the degree of B.Sc., in the courses of civil, electrical, mechanical and mining engineering, who are desirous of becoming Associate Members of the Institution, may under certain conditions be exempted from the examination prescribved for admission to the Institution.

2. EXAMINATIONS.

1. Final examinations are held in all lecture subjects. Class examinations, for which credit may be given in the sessional standing, are held from time to time, at the option of the professor.

2. Students who have failed in one or more subjects of the curriculum shall (except in cases where they are called upon to repeat their year) be required to make good their standing by passing:

(a) The regular supplemental examinations held immediately before the opening of the session, or

(b) The final examinations in a subsequent session, or

(c) Special examinations, which shall be given only under exceptional circumstances and by authority of the Faculty.

3. Failures in drafting and laboratory subjects may under certain conditions be made good by attendance on special classes during the afternoon of the first six weeks of the following session.

4. No undergraduate will be allowed to take instruction in any subject until he has passed the examinations in the necessary prerequisite subjects, for particulars regarding which, see page 256.

3. ENGINEERING SOCIETIES.

1. The headquarters of the Engineering Institute of Canada are located in Montreal. Students in all departments of engineering are strongly recommended to become student members of the Institute, which they can do on payment of a fee of $3.00. They are then entitled to the monthly journal of the Institute, and to the use of the Institute's rooms, 176 Mansfield Street. They also have opportunities of meeting the prominent engineers of the country, and of being present at the fortnightly sessions, at which papers are read on current engineering subjects and works of constructon.

2. Students in Mining and Metallurgy are strongly recommended to become members of the McGill Mining and Metallurgical Society, which, although a student body (see pages 246 and 249), is affiliated with the Canadian Institute of Mining and Metallurgy, the headquarters of which are in Montreal. Members of this Society receive the Monthly Bulletin or the Transactions of the Institute without extra expense, and are entitled to attend all meetings and to compete for the prizes offered.

Students are invited to compete for the prizes which are offered by the Institutes above mentioned.

COURSES OF INSTRUCTION

The instruction in this Faculty is designed to afford a thorough training of a practical as well as theoretical nature, in the following branches of applied science:—

I.—Architecture.
II.—Chemical Engineering.
III.—Civil Engineering and Surveying.
IV.—Electrical Engineering.
V.—Mechanical Engineering.
VI.—Metallurgical Engineering.
VII.—Mining Engineering.

NOTE:—A course is also offered in Engineering Physics, particulars of which are given in the Bulletin of the Faculty of Arts.

Military Instruction (subject No. 400) may be given as alternative to certain subjects in connection with Courses II to VII inclusive (see pages 196 to 206).

CURRICULUM.

The curriculum as laid down in the following pages may be changed from time to time as deemed advisable by the Faculty, and in no case shall it be binding beyond the session covered by this calendar announcement.

The regular work of each session in Applied Science begins on or about October 1st and ends about the 30th of April for students of the first three years. The summer work will be taken during the month of May except as specified on page 207.

For Fourth Year students the examinations will commence in 1923, and thereafter, early in May. The Convocation for conferring degrees will be held in 1923 on May 29th.

The work prescribed for the first two years is the same in all courses, except in that leading to the degree of Bachelor of Architecture (Course I).

The first two years of the engineering courses (II to VII) are mainly devoted to mathematics, mechanics, physics, chemistry, drawing and shopwork, as it is deemed necessary that students in these courses should master the general principles underlying scientific work before commencing the professional subjects.

I. ARCHITECTURE

The course for the degree of Bachelor of Architecture extends over five years. Full information is given in the Announcement of the Department, which will be sent to interested persons upon request to the Registrar of the University.

The work of the First Year is similar in most respects to that of the first year in other Departments in Applied Science, but special instruction is given in drawing and architectural geometry.

The object of this curriculum is to impart such general culture, scientific knowledge and skill of hand as will prepare the student to profit by the work of the succeeding years, under the heads of:—

(*a*) Design; (*b*) Aesthetic; (*c*) History; (*d*) Science; (*e*) Construction; (*f*) Professional Practice; (*g*) Drawing.

An essay on an historical or theoretical subject is required in each term from all students following the historical or theoretical courses.

In all courses studio work goes hand in hand with oral teaching, with a view to the practical application of the theory, while at the same time affording opportunity for the acquisition of power in draughtsmanship and practice in design.

An arrangement has been concluded between McGill University and the Province of Quebec Association of Architects, whereby holders of the Bachelor of Architecture degree are admitted to practice in the Province after spending one year in the office of a member of the Association, and passing an examination in design, instead of having to take the regular prescribed entrance examinations. The office experience may be gained by working in the summer vacations.

FIRST YEAR.

SUBJECT	Subject Number	Lectures per week		Draughting Room and other periods per week		For details see page
		First Term	Second Term	First Term	Second Term	
General History	Arts(13)	2	2	..	..	215
English	131	2	2	..	..	230
Algebra	192	5	4	..	..	235
Geometry	191	2	..	..	..	235
Trigonometry	193	..	3	..	..	236
Mechanics	194	2	2	..	..	236
Physics	Arts (44)	2	2	..	..	215
Physics Lab	Arts (45)	..	..	1	1	215
Elements of Architecture	5	1	1	..	..	213
Architectural Geometry I	18	..	..	2	2	217
Architectural Drawing	33	..	..	1	1	217
Freehand Drawing	38	..	..	2	2	217

All undergraduate students of the First Year in the course of Architecture who at the close of the first term have failed to obtain an average of 33 per cent. in the following five subjects, viz:—mechanics, geometry, algebra, physics and architectural drawing, will be required to withdraw from the Faculty.

Any other student of the First or any subsequent year, whose record is found to be unsatisfactory, may at any time be required to withdraw from the Faculty.

All students of the First Year in the Department of Architecture who hav pursued their course of study without serious interference due to personal illness, domestic affliction or urgent affairs, and who fail in more than three subjects of the First Year, in which standing is determined by sessional examinations or in three such subjects aggregating over 350 possible marks, shall be required to repeat the work of the First Year, and while so doing shall be debarred from taking any more advanced work.

SECOND YEAR

Design A	1	..	..	2	2	213
Elements of Composition	6	1	1	..	..	213
Building Construction	24	1	1	..	..	216
Building Details	25	..	..	2	2	216
Arch. Engineering I	26	1	1	..	..	216
Arch. Eng. (Draughting) I	27	..	..	1	1	216
History of Classic Arch	14	2	2	..	..	215
Arch. Geometry II	19	..	..	1	1	217
Surveying	346	2	2	..	..	252
Mapping	348	..	..	1	1	253
Architectural Drawing	34	..	..	1	1	254
Freehand Drawing	39	..	..	1	1	217
Summer Work	50	..	..	..	..	218
Surveying Field Work	347	..	..	..	..	252
Architectural Essay	46	..	..	..	..	218

All students of the Second Year in the Department of Architecture who have pursued their course of study without serious interference due to personal illness, domestic affliction or urgent affairs, and who fail in subjects aggregating not less than 350 possible marks, shall be required to repeat the Second Year.

THIRD YEAR

SUBJECT	Subject Number	Lectures per week		Draughting Room and other periods per week		For details see page
		First Term	Second Term	First Term	Second Term	
Design B	2	..	..	5	5	213
Theory of Design*	7	1	1	..	..	214
Arch. Engineering, II A	28	1	1	..	..	216
Arch.Eng.(Draughting),IIA	29	..	..	1	1	216
History of Mediaeval or Renaissance Archt.†	15 or16	2	2	..	..	215
Ornament and Decoration.‡	9and 10 or 11 and 12	1	1	1	1	214
Freehand Drawing	40	..	..	2	2	217
Architectural Drawing	35	..	..	1	1	217
Summer Work	50	..	..	..	..	218
Architectural Essay	47	..	..	..	..	218

FOURTH YEAR

Design C	3	..	..	5	5	213
Theory of Planning*	8	1	1	..	..	214
Arch. Engineering, II B	30	1	1	..	..	216
Arch.Eng.(Draughting),IIB	31	..	..	1	1	216
History of Mediaeval or Renaissance Architecture	15 or 16	2	2	..	..	215
Ornament and Decoration	9 and 10 or 11 and 12	1	1	1	1	214
Architectural Drawing	36	..	..	1	1	217
Freehand Drawing	41	..	..	1	1	217
Modelling	42	..	..	1	1	217
Architectural Essay	48	..	..	..	..	218
Summer Work	50	..	..	..	..	218

FIFTH YEAR

Design D	4	..	..	7	7	213
Modern Architecture	17	2	2	..	..	215
Professional Practice	32	2	2	..	..	217
Engineering Law	175	1	1	..	..	235
Historical Drawing	37	..	..	1	1	217
Modelling	43	..	..	1	1	217
Hygiene	22	2	..	..	..	216
Heating and Ventilation	23	..	1	..	1	216
Architectural Essay	49	..	..	..	..	218
Summer Work	50	..	..	..	..	218

†The courses on Mediaeval and Renaissance Architectural History, numbers 15 and 16, are given in alternate years.

During the Session 1922-23, the History of Mediaeval Architecture will be given.

‡Ornament and Decoration courses, numbers 9 and 10, and 11 and 12, are given in alternate years. During the Session 1922-23, numbers 11 and 12 will be given.

For summer reading, see pages 209 to 212.

*The courses on Theory of Design and Theory of Planning, numbers 7 and 8, will be given in alternate years.

Note—In the Department of Architecture after two failures in any subject a third examination will only be granted after the student concerned has taken special tuition of a character approved by the Department.

ENGINEERING COURSES

The subjects of instruction in the first two years of the Engineering Courses (II to VII), and the number of hours per week devoted to each are as follow:—

FIRST YEAR

SUBJECT	Subject Number	Lectures per week		Laboratory, etc., periods per week		For details see page
		First Term	Second Term	First Term	Second Term	
Algebra	192	5	4	..	..	235
Descriptive Geometry	341	1	1	⅔	⅔	229
*English	131	2	2	..	..	230
Freehand Drawing and Lettering	342, 343	1	1	⅔	⅔	229
Geometry	191	2	..	..	..	235
Mechanical Drawing	211	..	..	2	2	237
Mechanics	194	2	2	..	..	236
Physics	311	2	2	..	..	251
Physics Lab	312	..	..	1	1	251
Shopwork	212-14, 220	..	..	2	2	237
Shop Methods	215	½	½	..	..	237
Trionometry	193	..	3	..	..	236

*The lectures will be supplemented by individual conferences with the instructors.

All undergraduate students of the First Year, who at the close of the first term have failed to obtain an average of 33 per cent. in the following five subjects, viz:—mechanics, geometry, algebra, physics, and descriptive geometry, will be required to withdraw from the Faculty.

Any other student of the First, or any subsequent Year, whose record is found to be unsatisfactory, may at any time be required to withdraw from the Faculty.

All students of the First Year who have pursued their course of study without serious interference due to personal illness, domestic affliction or urgent affairs, and who fail in more than three subjects of the First Year, in which standing is determined by sessional examinations, or in three such subjects aggregating over 350 possible marks, shall be required to repeat the work of the First Year, and while so doing shall be debarred from taking any more advanced work.

SECOND YEAR

SUBJECT	Subject Number	Lectures per week		Laboratory, etc., periods per week		For details see page
		First Term	Second Term	First Term	Second Term	
Anal. Geometry	197	3	..	..	..	236
Calculus	198	2	4	..	..	236
General Chemistry	51	3	3	..	..	219
General Chem. Lab	52	..	..	1	1	219
Mapping	348	..	..	1	1	253
Materials of Construction	81	1	1	..	..	223
Descriptive Geometry and Perspective	345	1	1	⅔	⅔	229
Mechanics	83	2	2	⅔	⅔	223
Mech. of Machines	218	..	1	..	⅔	238
Physics	315	2	2	..	..	251
Physics Lab	316	..	..	1	1	251
Shop Methods	221	1	1	..	..	238
Surveying	346	2	2	..	..	252
Surveying Field Work	347	..	..	..	..	252
Summer Reading	132	..	..	..	..	209

NOTE—Surveying field work, 4 weeks, beginning April 30th, 1923. See pages 207 and 255.

For other summer work, see pages 207 and 209.

All students of the Second Year who have pursued their course of study without serious interference due to personal illness, domestic affliction or urgent affairs, and who fail in more than four subjects of the Second Year, in which standing is determined by sessional examinations, or in three such subjects aggregating over 400 possible marks, shall be required to repeat the Second Year.

II. CHEMICAL ENGINEERING*

The aim of this course is to prepare students for positions demanding a knowledge of both chemistry and engineering. The duties of a chemical engineer require him to be conversant with chemical processes and the installation of chemical units, and to understand the construction of buildings, the installation and operation of machinery, etc. Accordingly the course of study combines a considerable amount of engineering with the maximum of chemical training which can be attained without overpressure.

Between the Second and Third Years, students taking this course must attend a summer session of four weeks in the chemical laboratories.

In the Third Year specialization commences, the time being divided about equally between chemical and engineering studies, and in the vacation between the Third and Fourth Years all students must give at least six weeks to work in some chemical industry or to equivalent laboratory work satisfactory to the Professor of Chemistry.

In the Fourth Year the engineering studies are completed and the chemical studies which predominate are arranged in two alternative courses, as students cannot possibly study more than a few of the very varied chemical industries. These alternative courses fall broadly under one of two headings:—(*a*) inorganic, (*b*) organic, as indicated in the table below, one or other of which the student shall select. Should a student desire to prepare for an industry which requires more engineering knowledge than is provided in the regular course he may substitute additional engineering subjects for some of the chemical work. Details will be arranged on application to the Faculty through the Professor of Chemistry.

While every effort will be made to supply detailed information as to methods and plan of many of the important industries, and to provide acilities for experimentally carrying out the processes involved, the main faim will be to study the principles which underlie the application of chemistry to economical production.

FIRST AND SECOND YEARS.

As in other Engineering Courses. For details, see pages 194 and 195.

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*No student shall be permitted to proceed to the Third Year of this course unless he has secured at least second class standing in the subjects of General Chemistry (51) and Chemistry Laboratory (52).

THIRD YEAR

SUBJECT	Subject Number	Lectures per week		Laboratory, etc., periods per week		For details see page
		First Term	Second Term	First Term	Second Term	
Crushing and Grinding Mach	295	2	..	..	..	247
Economics	171	..	2	..	..	235
General Elem. Metall	262	2	..	..	..	243
Inorg. Quant. Anal. & Lab.	61–62	1	..	3	3	220
Mech. Eng. and Lab	226 and 228	2	2	1	1	239
Mineralogy	142	2	2	..	..	233
Mineral. Deter	143	..	..	2	..	233
Organic Chemistry & Lab.	56–57	3	2	..	2	220
Physical Chemistry	58	2	..	..	..	220
Strength of Materials & Lab	87–88	2	2	..	1	224
Structural Engineering	90	..	1	..	1	224
Summer School, Inorg. Qual. Anal. and Lab	54 and 55	..	..	..	..	219
Summer Essay or Reading	133	..	..	..	..	210

FOURTH YEAR

Adv. Inorg. Chem.	72	2(a)	2(a)	..	..	222
Adv. Org. Chem. & Lab.	64–65	2(b)	2(b)	4(b)	2(b)	221
Applied Electro-Chem	70	2	..	..	..	222
*Colloid Chemistry	75	..	2	..	..	222
Elem. of Elec. Eng. & Lab.	111–112	2	2	1	1	231
Engineering Economics	172	2	..	..	..	235
†Engineering Law (alt.)	175	1	1	..	..	235
Fire Assay	273	1(a)	..	1(a)	..	245
Food Chemistry	73	..	1(b)	..	2(b)	221
History of Chemistry	74	..	1	..	..	222
†Hydraulics	100	1	..	½	..	227
Industrial Inorg. Chemistry	68	2	..	..	..	222
Industrial Organic Chem.	69	..	2	..	..	222
Inorganic Laboratory	67	1(a)	..	3(a)	4(a)	221
Metallography	279	..	..	..	1(a)	245
†Military Science (alt.)	400	2	2	..	1	...
Phys. Chem. and Lab.	66	3	3	..	2	221
Summer Essay	134	..	..	..	..	211

*The hours required for laboratory work in this course will be taken from time assigned to subjects 65 or 67.

†Military Science (400) is alternative with Engineering Law (175) and Hydraulics (100).

(a) Inorganic alternative. (b) Organic alternative.

III. CIVIL ENGINEERING

The courses of study are designed to emphasize the fundamental principles embodied in the study of mechanics, strength of materials, and hydraulics, while at the same time affording an opportunity of applying these principles to practical problems ranging over as wide a portion as possible of the field covered by the practice of civil engineers. A broad and sound foundation is thus laid for future specialization, either in graduate courses or in actual practice. The outlook of the student is further broadened by courses in Mechanical and Electrical Engineering. In the Fourth Year an alternative course is provided for students looking forward to Municipal Engineering or City Management. In the designing courses special attention is given to the interpretation and critical discussion of specifications as well as to the economical principles involved. Students are recommended to obtain as much practical experience as possible during the summer vacations, and are specially recommended to spend at least one season in a drafting office before the final year.

FIRST AND SECOND YEARS.

As in other Engineering Courses. For details, see pages 194 and 195

THIRD YEAR

SUBJECT	Subject Number	Lectures per week		Laboratory, etc., periods per week		For details see page
		First Term	Second Term	First Term	Second Term	
Economics	171	..	2	..	..	235
Foundations	89	..	1	..	1	224
Geology, General	141	2	2	½	½	233
*Highway Engineering (alt).	85	..	2	..	2	226
Hydraulics & Lab	97–98	2	1	..	..	225
†Map Projections, (alt.)	351	..	..	1	..	253
Mech. Eng. and Lab	226, 228	2	2	1	1	239
Mechanics	86	2	..	..	..	223
*Railway Eng. (alt.)	92–93	2	2	2	2	225
*Railway Eng. (alt)	92a, 93a	2	..	2	..	225
†Sanitary Science, (alt.)	82	1	..	1	..	226
Strength of Mats. and Lab.	87–88	2	2	..	1	224
Structural Eng.	90	..	1	..	1	224
Surveying	353	2	2	..	..	253
Surveying Fieldwork‡	354	..	..	..	..	253
Summer Reading or Essay	133	..	..	..	..	210

*Railway Engineering (92, 93) is alternative with Highway Engineering (85) and Railway Engineering (92a, 93a).

†Map Projections (351) is alternative with Sanitary Science (82).

For Surveying Fieldwork (354), see details of Summer Schools, pages 207 and 255.

FOURTH YEAR

SUBJECT	Subject Number	Lectures per week		Laboratory, etc., periods per week		For details see page 96
		First Term	Second Term	First Term	Second Term	
Elements of Elec.Eng.&Lab	111–112	2	2	1	1	231
Engineering Economics	172	2	..	..	..	235
*Engineering Law	175	1	1	..	..	235
Geodesy & Lab	359, 360	2	..	1	..	253
†Geodetic Fieldwork	361	..	..	..	..	253
*Military Science	400	2	2	..	1	
Strength of Materials	95	2	1	..	1	226
Theory of Structures	94	1	2	1	2	226
and either						
Bridge Design	96	2	2	2	2	226
*Hydraulic Machines	99	..	2	..	..	227
Municipal Engineering	101	2	2	..	1	227
or						
Bridge Design	96a	2	2	2	1	227
Civic Administration	104	1	..	..	..	228
Waste Disposal	103	1	..	..	..	228
Water Supply & Sewerage	102	..	3	..	2	227
Summer Essay	134	..	..	..	..	211

*Military Science (400) is alternative with Eng. Law (175) and Hydraulic Machines (99).

†For Geodetic Fieldwork (361) see details of Summer Schools, pages 207 and 255.

IV. ELECTRICAL ENGINEERING.

The electrical studies of the Third Year embrace a consideration of current flow; the principles of electro-magnetism; electrical measurements; the design and performance of electrical machinery.

The Fourth Year is devoted principally to electrical work, and includes lectures and laboratory work on variable and alternating current phenomena, the principles of action and the design of electrical machinery, electric lighting and systems of power distribution, central station design and operation, urban and interurban railways, hydro-electric power development, electro-chemistry, electro-metallurgy and wireless telegraphy.

Occasional visits are made to electrical works and power plants.

FIRST AND SECOND YEARS

As in other Engineering courses. For details, see pages 194 and 195.

THIRD YEAR

SUBJECT	Subject Number	Lectures per week		Laboratory, etc., periods per week		For details see page
		First Term	Second Term	First Term	Second Term	
Calculus	201	1	1	..	..	230
Economics	171	..	2	..	..	235
Electrical Engineering	113	3	3	..	..	231
Electrical Engin. Lab	114	1	1	2⅔	2⅔	231
Machine Design	225	2	2	..	..	238
Mechanical Drawing	232	..	..	1	1	240
Mech. Eng. and Lab	223, 226	2	2	2	1	239
Mechanics	86	2	..	..	..	223
Mech. of Machines	224	2	2	⅔	⅔	238
Thermodynamics	229	2	2	..	..	239
Strength of Mats. and Lab.	87, 88	2	2	..	1	224
Summer Reading or Essay	133	..	..	..	..	210

FOURTH YEAR

Applications of Electricity	123	..	2	..	..	232
Applied Elec. Chem	70	2	..	..	..	222
Electric Traction	121	..	2	..	..	232
†Electrical Designing	122	2	2	1	1	232
Electrical Engineering	117–118	3	3	3	3	232
Elect. Light & Powr. Dist.	120	2	..	..	..	232
Electrical Photometry and Illumination	124	2	..	..	..	233
Electro-Metallurgy	276	..	2	..	..	245
Engineering Economics	172	2	..	..	..	235
†Engineering Law (alt.)	175	1	1	..	..	235
Hydraulics & Lab	97-98	2	..	1	..	225
Machine Design	243	2	..	..	..	..
†Military Science (alt.)	400	2	2	..	1	241
Physics and Lab	320 321	2	2	2	2	252
Summer Essay	134	..	..	..	..	211

For the course in Engineering Physics, see Arts Announcement.

†Military Science (400) is alternative with Engineering Law (175) and one lecture hour per week of Electrical Design (122)

For Summer Schools, see page 207.

V. MECHANICAL ENGINEERING.

The subjects of instruction in this Department are of interest to students who are likely to take up work connected with:—

(*a*) The constructive or manufacturing side of mechanical engineering, including industrial or production engineering; (*b*) steam engineering; (*c*) gas engine and producer work; (*d*) power plant engineering; (*e*) heating and ventilation of buildings and factories; (*f*) aeronautics and aerodynamics.

Courses are given during the Third and Fourth Years in mechanical engineering as applied to questions connected with power installations and prime movers. The earlier portion of this work is supplementary to the instruction given in thermodynamics, mechanics of machines and machine design, and leads up to the more advanced or technical subjects of power plant design, industrial plant design and works organization.

Students in the Department of Mechanical Engineering take systematic work in Electrical Engineering during the Third Year.

Instruction in workshop practice is given in the First, Third and Fourth Years. This work is of a systematic nature, and is intended to prepare for, but by no means to replace, that practical experience of manufacturing operations on a commercial basis which every mechanical engineer must obtain for himself.

The course in thermodynamics deals more particularly with the theory of heat engines, and time is assigned for additional graphical and experimental work in connection with the subject.

Arrangements are made for occasional visits to power plants and manufactories of importance.

FIRST AND SECOND YEARS.

As in other Engineering Courses (see pages 194 and 195), with additional course in May for second year (page 207).

THIRD YEAR

SUBJECT	Subject Number	Lectures per week		Laboratory, etc , periods per week		For details see page
		First Term	Second Term	First Term	Second Term	
*Accounting (alt.)	258	2	2	⅓	⅓	241
Economics	171	..	2	..	..	235
Elements of Elect.Eng.Lab	111–112	2	2	1	1	231
Machine Design	225	2	2	..	..	238
Mechanical Drawing	231	..	..	2	1	240
Mechanical Eng. and Lab.	227, 228	3	3	1	1	239
Mechanics	86	2	..	..	..	223
*Mechanics of Machines (alt.)	224	2	2	⅓	⅓	238
Shopwork	235, 236	..	..	1	1	240
Shop Processes and Management	237	1	1	..	..	240
Strength of Mats and Lab.	87, 88	2	2	..	1	224
Structural Engineering	90	..	1	..	1	224
Thermodynamics	229	2	2	..	..	239
Summer School Shopwork	233, 234	..	..	.	..	240
Summer Reading or Essay	133	..	..	..	..	210

*Alternative with Mechanics of Machines (224); one or other of these subjects must be taken.

FOURTH YEAR

Designing	241	..	..	1	1	241
Engineering Economics	172	2	..	..	..	235
†Engineering Law (alt.)	175	1	1	..	..	235
Experimental Eng.	257	1	1	..	..	242
Heat and Vent. of Buildings	247	1	1	..	..	242
Hydraulics and Lab.	97, 98	2	..	1	..	225
†Hydraulic Mach.	99	..	2	..	..	227
**Man. Plant Des. (alt.)	253	..	2	..		242
Machine Design	242	2	2	..	⅓	241
Power Plant Design	244	1	1	1	1	241
Mech. Eng. Lab.	249	..	..	3	3	242
Mech. of Mach. (alt.)	240	2	2	⅓	⅓	241
†Military Science (alt.)	400	2	2	..	1	...
**Mill Buildings	91	2	..	⅓	..	225
Shopwork	252	..	..	1	1	242
Thermodynamics	251	2	2	..	..	242
Works Organization and Accounting	254	1	1	..	..	243
Summer Essay	134	..	..	..	..	211

†Military Science (400) is alternative with Engineering Law (175) and Hydraulic Machinery.

**Students electing the Accounting alternate (258) in the Third Year must take these two subjects in the fourth. Mechanics of Machines (240) cannot be taken

VI. METALLURGICAL ENGINEERING.

This course is designed for students intending to enter metallurgical works, such as steel works, smelting or refining plants, foundries, rolling mills, etc. It includes instruction in the engineering, chemical, metallurgical and ore-dressing studies required by practising metallurgists.

A certain amount of mining is included in the Third Year curriculum in order to show the relation between mining and metallurgy; but the course is not intended for students wishing to become mining engineers.

In the Third Year instruction is given in economics, chemistry, assaying, geology, mineralogy, metallurgy, mining, ore-dressing, and mechanical and structural engineering.

After the Third Year there is a summer school in metallurgical works.

In the Fourth Year instruction is given in chemistry, electrical engineering, law, economics, hydraulics, metallurgy and ore-dressing. Metallurgical designing and laboratory work form important parts of the course.

FIRST AND SECOND YEARS.

As in other Engineering Courses. For details, see pages 194 and 195.

Between the Second and Third Years there is a four weeks' summer school in qualitative analysis in the chemical laboratory, beginning about the first of May.

THIRD YEAR

SUBJECT	Subject Number	Lectures per week		Laboratory, etc., periods per week		For details see page
		First Term	Second Term	First Term	Second Term	
Economics	171	..	2	..	..	235
Fire Assaying and Lab	263, 264	..	1	..	2	243
Geology, General	141	2	2	⅓	⅓	233
Gen Elem. Metall. & Lab.	261	2	..	..	½	243
Inorg. Quant. Anal. and Lab.	61, 62	1	..	3	..	220
Mech. Eng. and Lab.	226, 228	2	2	1	1	239
Metall. Calculations	265	1	..	..	..	244
Mineralogy	142	2	2	..	..	233
Mineralogy, Determinative	143	..	..	2	..	233
Mining Engineering	291	..	2	..	..	246
Ore Dressing and Lab	292	2	2	..	½	246
Physical Chemistry	58	2	..	..	..	220
Strength of Mats. and Lab.	87, 88	2	2	..	1	224
Structural Engineering	90	..	1	..	1	224
Summer School Inorg. Qual. Anal. and Lab.	54, 55	..	..	..	..	... 219
Summer Reading or Essay	133	..	..	..	..	210

FOURTH YEAR

Elem. Elect. Eng. and Lab.	111, 112	2	2	1	1	231
Electro-Metal and Lab	275	..	2	..	1	245
Engineering Economics	172	2	..	..	..	235
Engineering Law	175	1	1	..	..	235
General Metallurgy	271	2	2	..	..	244
Hydraulics and Lab	100	1	..	½	..	227
Industrial Chemistry, Inorg	68	2	..	..	..	222
Inorganic Lab	67	1	..	3	..	221
Metallurgy and Lab	272, 274	2	2	½	3	244
Metallurgy Colloquium	277	..	1	..	..	245
Metall. Mach. and Design	278	..	..	..	2	245
†Military Science (alt.)	400	2	2	..	1	
Ore Dressing and Lab	300, 305	2	..	1	..	247
†Ore Deposits (alt)	148	1	4	..	..	234
*Summer Sch. Metal Works	267	..	..	..	..	244
Summer Essay	134	..	..	..	..	211

†Military Science (400) is alternative with Ore Deposits (148).

*Metallurgical summer school (267) is taken at the end of the Third Year.

For Summer Schools, see page 207.

VII. MINING ENGINEERING.

Specialization does not begin until the Third Year, when an elementary course in metallurgy is given and the professional courses in mining, ore-dressing and fire-assaying are begun, but the chief work is still in such fundamental science subjects as applied mechanics, chemistry, geology, mineralogy, and in mechanical engineering.

The Fourth Year, on the other hand, is very largely given up to technical work in mining, ore dressing, economic goeology, metallurgy, and electrical engineering, and two elective alternative lines of study are offered, both including the essential subjects of the Mining Course and leading to the degree, but the first (*a*) giving the maximum amount of instruction practicable in geology, advanced petrography and mining machinery, and the second (*b*) substituting a fairly heavy course in electrical engineering for an equivalent portion of the subjects named above.

In both cases the Fourth Year work includes the equivalent of nearly two full days per week in the laboratories and drafting room of the mining department, and in the second term each student is required to prepare a thesis giving the result of an extended individual experimental investigation.

A field school in mining, ore-dressing and geology is held between the Third and Fourth Years, the work ordinarily beginning immediately after the close of the April examinations. From four to five weeks are spent in travel, during which a number of mines and concentrators are visited and critically studied under the direction of the Departmental staff.

Facilities are also afforded to graduate students who wish to do advanced work in mining or ore-dressing, and the Department possesses three endowed research fellowships for the benefit of graduates who show exceptional ability. (See page 248.)

FIRST AND SECOND YEARS.

As in other Engineering Courses. For details, see pages 194 and 195.

THIRD YEAR

SUBJECT	Subject Number	Lectures per week		Laboratory, etc., periods per week		For details see page
		First Term	Second Term	First Term	Second Term	
Crushing Machinery	295	2	..	..	..	247
Economics	171	..	2	..	..	235
Fire Assaying	263	1	..	2	..	243
Geology, General	141	2	2	⅓	..	233
Inorg. Qual. Anal. and Lab.	59, 60	..	1	..	2	220
Mine Mapping	293	..	..	1	..	247
Mech. Eng. and Lab.	226, 228	2	2	1	1	239
Gen. Element. Metall.	261	2	..	..	½	243
Mineralogy	142	2	2	..	..	233
Mineralogy, Determinative	143	..	..	2	..	233
Mining Engineering	291	..	2	..	..	246
Ore Dressing and Lab.	292	2	2	..	½	246
Strength of Mats. and Lab.	87, 88	2	2	..	1	224
Structural Engineering	90	..	1	..	1	224
Surveying	352	2	..	..	..	2 3
Surveying Field Work	354	..	..	..	..	253
Summer Reading or Essay	133	..	..	..	..	210

FOURTH YEAR

Engineering Economics	172	2	..	..	..	235
*Elem. of Elec. Eng. and Lab.	111, 112	2	2	1	1	231
Engineering Law (alt.)	175	1†	1†	..	..	235
Geology of Canada	149	1	..	..	..	234
‡Geology, Historical (alt.)	152	..	2	..	1	234
Hydraulics	100	1	..	½	..	227
Inorg. Quantitative Anal.	71	..	..	4	..	222
Metallurgy, General	271	2	2	..	..	244
Military Science (alt.)	400	2†	2†	..	1†	..
Mining Engineering	297	3	3	..	..	247
Mining Machinery	298	..	2	..	2	247
Mining Machinery (Adv.)	299	2	..	..	..	247
Mining Colloquium	301	..	1	..	..	247
Ore Dep. and Econ. Geol.	148	1	4†	..	..	234
Ore Dress., Milling and Lab.	300, 305	2	..	1½	..	247
Ore Dress. Lab. and Thesis	306	..	..	..	3	248
Petrography and Lab.	146	1	..	..	1	233
‡Petrography Advanced (alt)	147	..	..	1	..	234
Mining Field School	294	..	..	..	..	249
Summer Essay	134	..	..	..	..	211

†Students taking Military Science omit the whole of Engineering Law. (175) and 12 lectures each, in Mining Machinery (298) and Ore Deposits (148).

*Omitted by students taking alternative elective (a).

‡Omitted by students taking alternative elective (b).

Note:—Mining Field work at end of Third Year. See page 249.

Surveying Field work, between the Second and Third Years. See page 207.

SUMMER SCHOOLS.

Undergraduates are required to attend Summer Sessions as specifies below. The work is set forth in detail under the subject numbers referred to.

Except as noted, classes will begin on April 30th and will close on May 26th, 1923.

COURSE	Students entering Second Year		Students entering Third Year		Students entering Fourth Year	
	Subject No.	Page	Subject No.	Page	Subject No.	Page
Architecture	347	252	†50	218	†50	218
Chemical Engineering	347	252	54, 55	219	...	...
Civil Engineering	347	252	354	253	*361	253
Elect. Engineering	347	252	...	...	...	...
Mechanical Engineering	347	252	233, 234	240	...	...
Metallurgical Engineering	347	252	54, 55	219	267	244
Mining Engineering	347	252	354	253	294	249

*This school is held during the month of September.

†This school will be held in 1922 from 12th September to 27th September, inclusive.

NOTE.—SPECIAL SUMMER SCHOOLS

As it is seldom practicable for students admitted to advanced standing in McGill University from other colleges to attend the May Summer School preceding the work of the year to which they are admitted, the following arrangements have been made for such students, but it must be understood that they only apply to students who have not previously been in attendance in the Faculty of Applied Science.

(a) Students entering the Second Year are required to attend a special Summer School in Surveying which extends over a period of four weeks in September preceding the work of the Session.

(b) Students entering the Third Year of the courses in Chemical Engineering and Metallurgical Engineering are required to attend a Special Summer School in Chemistry which extends over a period of four weeks during the month of September preceding the work of the Session.

(c) Students entering the Third Year in the course in Mechanical Engineering should attend a Special Summer School in Shopwork held in September. This School may, however, in certain cases be replaced by other work which has received in advance the approval of the Head of the Department.

(d) Students entering the Third Year in the courses in Civil and Mining Engineering are required to attend a Special Summer School in Surveying during the latter half of September, and in these courses further work in Surveying is required for a portion of the month of May at the close of the Third Year.

(e) Students entering the Third Year in the course in Electrical Engineering are required to submit evidence satisfactory to the Head of the Department that they have been employed for a time at least equivalent to one month of steady employment, in a first class electrical shop during the vacation preceding their entrance into the Third Year.

(f) Students entering the Fourth Year in the courses in Mining and Metallurgical Engineering are required to submit evidence that they have had practical experience in mining and metallurgical work at least equivalent in extent to the work done in the regular Summer Schools in these courses and should by correspondence in the preceding Spring secure the approval of the Head of the Department concerned of the work which they propose to offer in place of the regular summer work.

(g) Students entering the Third Year or any subsequent year in the course in Architecture must submit evidence satisfactory to the Head of the Departmnt that they have done summer work fully equivalent to the regular schedueed summer work omitted.

SUMMER ESSAYS AND SUMMER READING.

SESSION 1922-23

I. For Students Entering the Second Year.

All students entering the Second Year, except those in the course in Architecture (see below), will be required to read not less than three books from Group "A" and one book from Group "B" in the following list:—

"A"

Macaulay—Essays on Hampden, Walpole, Pitt, Chatham and Hastings.
No. 225, Everyman's Library. (90c.)
J. M. Dent & Sons, Ltd.

Froude—"Life of Beaconsfield."
No. 66, Everyman's Library. (90c.)

Russell—"Life of Gladstone."
No. 661, Everyman's Library. (90c)

Withers—"Poverty and Waste."
E. P. Dutton & Co. ($1.25) or Murray (6s).

Farrand—"The Development of the United States."
Houghton Mifflin Company. ($1.50)

Parkman—"Montcalm and Wolfe."
Little Brown Company. (2 Vols., $3.50)

"B"

Thackeray—"Vanity Fair."
No. 298, Everyman's Library. (90c.)

George Eliot—"The Mill on the Floss."
No. 325, Everyman's Library. (90c.)

Stevenson—"Kidnapped."
Cassels, London; Burt, New York. (60c.)

Students in the course in Architecture must read the following books:—

Lethaby, W. R.—"Architecture." (Home University Library, W. Briggs, Toronto.)

Whyte Melville—"The Gladiators."
(Everyman's Library No. 523. Dent & Sons.)

Students in the course in Architecture must also either spend five weeks in the office of an architect or contractor, or prepare thirty-five reasonably large freehand sketches in any desired medium.

All students will be required to pass an examination in the summer reading at the opening of the session. A maximum of 100 marks will be allowed for this reading.

2. For Students entering the Third Year.

Students entering the Third Year must either

(a) Follow a course of summer reading, *or*
(b) Prepare an essay.

(a) The summer reading required, except in the course in Architecture (see below), is, Ogg—"Economic Development of Modern Europe" ($3.00, Macmillan), on which an examination will be held at the opening of the session. The same number of marks are allotted for this reading as for the essay.

(b) The essay must in all respects follow the specifications laid down for essays submitted by students enteringthe Fourth Fear, except that it may be shorter. All rules and regulations governing the Fourth Year essays, as set forth below, also apply to the Third Year essays. (See Section 3.)

Students in Electrical Engineering or Mechanical Engineering who elect to write an esssay and are not engaged during the summer on any engineering, scientific or industrial work which would afford a subject or an essay, may write on one of the following subjects:—

(Electrical Engineering students.)

The application of Electric Power to Industrial Establishments

(Mechanical Engineering students.)

(1) Oil Fuel Under Boilers.
(2) Pulp and Paper Manufacture.
(3) Steam Packings.

Students in Mining Engineering, or Metallurgical Engineering, who are for any reason unable to write on some engineering work of which they have personal knowledge will be required to take the summer reading (a).

Students in the course in Architecture must either read the following books or submit an essay on a subject approved by the Head of the Department, viz.,

"Chronicles of the Crusades." De Joinville-Villehardouin. (Everyman's Library No. 333.)
"A Short History of England." G. K. Chesterton.

The rules and regulations governing 4th and 5th Years in Architecture also apply to the 3rd Year Essay or Reading in this Department. (See Section 3.)

Summer Essays must be handed in at the Dean's Office not later than 5 p.m. on Tuesday, October 10th.

Students in the course in Architecture must also either spend five weeks in the office of an architect or contractor, or prepare thirty-five reasonably large freehand sketches in any desired medium.

3. For Students entering the Fourth and Fifth Years.

Students enteringthe Fourth Year, except those in the course in Architecture (see below), are required to prepare an essay during the summer, to be handed in at the Dean's office *not later than 5 p.m. on Tuesday, October 10th.* A maximum of 100 marks, or nearly 10% of the total marks for the year, is given for these essays.

The essays should be from 2,000 to 5,000 words in length in ordinary cases. They should be illustrated by drawings, sketches, and when desirable by photographs, specimens, etc.

No essay compiled from books alone will be accepted unless the student has obtained in advance the permission of the head of his department to prepare such an essay.

The *most acceptable subject for an essay* is a critical description of the work on which the student was engaged during the summer, but a description of any engineering, scientific, or industrial work with which he is familiar will be accepted.

Students in Electrical Engineering, or Mechanical Engineering, who are not directly connected with any such work, may write on one of the folllowing subjects:—

(Electrical Engineering students.)

(1) Generation of Electric Power.
(2) Long Distance Power Transmission.
(3) Distribution of Electric Power.
(4) Substitution of Electricity for Steam on Railroads.

(Mechanical Engineering students.)

(1) Heavy-oil Engines.
(2) Central Station Heating.
(3) Methods of Increasing Production in Manufacturing.
(4) Exhaust Steam Turbines using Steam at Pressures below Atmospheric.

The essays must be well expressed, and written in precise, well chosen, grammatical English. Advantage may be taken of any source of information in the preparation of the essays, but due acknowledgment must always be made of all the authorities and books which have been consulted. In judging the value of the essays, account will be taken not only of the subject matter, but also of style and literary construction.

All essays when handed in will become the property of the department concerned and will be filed for reference. Students are, however, permitted to submit duplicate copies of their essays in competition for the students' prizes of the Engineering Institute of Canada, or of the Canadian Institute of Mining and Metallurgy.

The essays must be written on paper of substantial quality and of a size approximately 8½ x 11 inches.

Students in the course in Architecture must either read the following books, or submit an essay on a subject approved by the Headof the Department, viz.,

(Fourth Year).

"Chronicles of the Crusades." De Joinville-Villehardouin.
(Everyman's Library No. 333.)
"A Short History of England." G. K. Chesterton.

(Fifth Year).

"Man and His Buildings." T. S Atlee.
(Swarthmore Press, London.)
"A Short History of England." G. K. Chesterton.

Students who take the Reading will be required to pass an examination in the same at the opening of the session. The same number of marks will be allotted for this reading as for the essay.

Summer Essays must be handed in at the Dean's Office not later than 5 p.m. on Tuesday, October 10th.

In addition to this reading, or essay, students in the course in Architecture must either spend five weeks in the office of an architect or contractor, or prepare thirty five reasonably large freehand sketches in any desired medium.

SUBJECTS OF INSTRUCTION

The following courses are subject to such modifications during the year as the Faculty may deem advisable.

DEPARTMENT OF ARCHITECTURE.

PROFESSORS:— { RAMSAY TRAQUAIR (in charge of Department.)
PERCY E. NOBBS (in charge of Design.)

ASSISTANT PROFESSOR:—W. E. CARLESS.

SPECIAL INSTRUCTOR:—E. DYONNET.

SPECIAL LECTURERS:— { P. J. TURNER.
LESSLIE R. THOMSON.

A.—Design.

The course in Design is divided into four classes (A, B,C and D). intended to be taken in the Second, Third, Fourth and Fifth years respectively. Advanced or backward students may be allotted to design classes to suit their individual requirements irrespective of their standing in other subjects, but good standing in Class D must be obtained prior to receiving the degree.

1. CLASS A. Simple problems in composition of a monumenta nature, not involving difficulties of plan.
2. CLASS B. The design of domestic and small public buildings.
3. CLASS C. The design of public buildings.
4. CLASS D. Problems involving the plan, structure and lay-out of complex buildings and groups of buildings. The diploma design for graduation is done in the second term.—Prof. Nobbs.

B.—Aesthetic.

The theoretical courses are intended to develop a sense of critical judgment in the student, emphasizing the fundamental principles of composition and design.

5. THE ELEMENTS OF ARCHITECTURE (24 lectures).

The five orders of Vignola, pedestals, pediments intercolumniation and superposition of orders, arches, vaults, domes, roofs, openings, etc.—Mr. Carless.

6. THE ELEMENTS OF COMPOSITION (24 lectures).

Analogies in the arts; principles of composition, mass unity, balance, character, scale, proportion; symmetric and asymmetric grouping; vertical and horizontal treatments; composition in plan, natural and axial; appreciation of intrinsic qualities of materials, values of textures, etc.—Mr.Carless.

7. THEORY OF DESIGN (24 lectures).

(a) *Aesthetic :*—The history of aesthetic enquiry, perception, emotion, pleasure, pain and expression; the art impulse, beauty defined, the work of art; the three elements—subject, emotional content and medium; the criteria.

(b) *Aesthetic practice :*—Pure design—the function of ornament, the moral logic of "motif," the material logic of treatment, the placing and classification of ornament; the evolution of functional forms, analysis of conventional forms; the use of scale and proportion; corrections and refinements.

Students will read selected passages from the works of G. Santayana, Yrjö Horn, Benedetto Croce, Marshall, Geoffrey Scott, Baldwin Brown and R. Blomfield.—Prof. Nobbs.

8. THEORY OF PLANNING: (24 lectures).

(a) *Elements of Planning :*—Dimensions, arrangements, scales, aspect, prospect, light, the structural bay, unit planning, axial planning.

(b) *Domestic Planning :*—Stables, cottages, housing, residences; country houses and gardens; apartment houses.

(c) *Public Buildings :*—Churches, halls, theatres, schools, libraries, hospitals, baths, fire stations, municipal buildings, etc.

Note:—The examples studied are selected from current architecture.—Prof. Nobbs.

Courses 7 and 8 will be taken in alternate years until further notice.

ORNAMENT AND DECORATION (48 lectures and 48 drafting periods), 9, 10, 11 and 12.

9. DECORATIVE HERALDRY. The place of heraldry in the arts; the laws of heraldry, heraldic art of different periods; modern practice and tendencies; symbolism and significant ornament.—Prof. Traquair.

Text-book :—Decorative Heraldry, Eve. *Reference :*—The Art of Heraldry, Fox Davies.

10. ORNAMENT IN FORM. The design of plaster work, terra cotta, stone carving, architectural sculpture, wood carving and furniture is dealt with as the evolution of form in distinctive materials, influenced incidentally by the prevailing taste of different periods.—Prof. Traquair.

Reference Books :—Plastering, Plain and Decorative, Millar; The Art of the Plasterer, Bankart; Mediæval Figure Sculpture in England, Prior.

11. METAL WORK. The design of wrought and cast iron, bronze, copper, brass, pewter, silver, gold and jewellery is dealt with historically and as the results of the methods of workmanship.—Prof. Traquair.

Reference Books :—English and Scottish Wrought Iron Work, Murphy; Ironwork, Starkie Gardner; Leadwork, Lethaby.

12. COLOR DECORATION. Stained glass, mosaic of various kinds, inlays, the use of colored materials in external and internal design, mural decoration, and the analysis and construction of pattern.—Prof. Traquair.

Reference Books :—Vitraux, Merson; Windows, Day.

C.—History.

13. GENERAL HISTORY. Mediæval and Modern Europe (50 lectures).

For particulars of the courses, which constitutes the First Year history course in the Faculty of Arts, see Arts Bulletin.

14. ANCIENT AND CLASSIC ARCHITECTURE (48 lectures).

The architecture of the ancient Egyptians, Chaldæans, Assyrians and Persians; the Minoan civilization; architecture of the Dorian and Ionian Greeks, with special attention to the refinement of form in Hellenic art; the architecture of Rome and Byzantium to the fall of the Byzantine Empire.—Prof. Traquair.

Text-books :—Banister Fletcher's History of Architecture; Anderson and Spier's Architecture of Greece and Rome.

15. MEDIÆVAL ARCHITECTURE (48 lectures).

The rise of the Romanesque schools, from the decline of the Western Roman Empire to the XI century; the evolution of ecclesiastical architecture in France and England to 1500 A.D.; the Gothic schools of Europe and the evolution of military and civil architecture.—Prof. Traquair.

Text-book :—Power's Mediæval Architecture.

16. RENAISSANCE ARCHITECTURE (48 lectures).

The beginning of the Renaissance in Italy and its influence on architecture from 1400 A.D. to 1600 A.D.; the Renaissance in France from Francis I to the Revolution; the earlier and later phases of the Renaissance in England and English architecture during the XVIII century. —Prof. Traquair.

Text-books :—Anderson's Italian Renaissance Architecture; W. H. Ward's French Renaissance Architecture; R. Blomfield's Short History of Renaissance Architecture in England.

17. MODERN ARCHITECTURE (48 lectures).

The end of the Renaissance and the classic revival in England; scholarly architecture; the "Gothic Revival" in England; the influence of Pugin, Ruskin and Morris; the "Arts and Crafts" movement; the eclectic schools; Shaw and the free classicists; the progress of art in Europe during the XIX century; the classic schools and "official" architecture; the neo-grec movement in France; the national revivals, the secession and art nouveau; the colonial architecture of North America, Spanish, French and English; the modern schools and the present position.—Prof. Traquair.

D.—Science.

MATHEMATICS 192, 193, 194. Algebra (for the first term only). Trigonometry and Mechanics. For full particulars, see pages 235 and 236.

42 and 43. PHYSICS AND LABORATORY (48 lectures and 24 periods)

The instruction includes a fully illustrated course of experimental ectures on the general principles of physics, embracing the laws of energy, heat, light, electricity and sound.—Dr. Eve.

346, 347 and 348. SURVEYING. (Full course: 4 weeks field school, 48 lectures and 24 draughting periods, see page 255).

22 and 23. HYGIENE OF BUILDINGS (24 lectures in first term, 12 lectures and working out of one graphical problem in second term).

22. Light and air, water, sanitary plumbing, sewage disposal. First term.—Dr. Starkey.

23. The heating and ventilation of buildings. Second term.—Prof. McKergow.

E.—Construction.

The Second Year work covers the ordinary building trades and detailing where calculations of a complicated kind are not involved. The Third Year work deals with structural problems involving calculation, while in the Fourth Year problems in structural design are worked out.

24 and 25. BUILDING CONSTRUCTION AND BUILDING DETAIL (24 lectures, 48 draughting periods).

Building materials, brickwork, masonry, carpentry, roofing, etc.; joinery of doors, windows, etc., and the finishing trades, such as plastering, painting and plumbing; underpinning, shoring, centering and forms. General working drawings are prepared, and building works in progress are visited.—Mr. Turner.

26 and 27. ARCHITECTURAL ENGINEERING I and ARCHITECTURAL ENGINEERING (Draughting) I (48 lectures and 24 draughting periods). Graphical methods of calculating and the strength of materials employed in construction.—Mr. Thomson.

28 and 29. ARCHITECTURAL ENGINEERING II A AND ARCHITECTURAL ENGINEERING (Draughting) II A (24 lectures and 48 draughting periods).

Theory and practice of reinforced concrete; foundations and retaining walls.—Mr. Thomson.

30 and 31. ARCHITECTURAL ENGINEERING II B and ARCHITECTURAL ENGINEERING (Draughting) II B (24 lectures and 48 draughting periods).

Rivets and riveting, symmetrical and eccentric connections; the design of structural steel, with examples of floors, columns, beams, office buildings and plate girders; the theory of arches in masonry and in steel. —Mr. Thomson.

Architectural Engineering II A, and Architectural Engineering II B, with the draughting periods allotted to each, will be taken until further notice by the Third and Fourth Years together, and are given in alternate years.

F.—Architectural Practice

131. ENGLISH COMPOSITION (24 lectures with exercises).

Instruction is provided with the Applied Science First Year classes. (See page 230)—Prof. Latham.

32. PROFESSIONAL PRACTICE (24 lectures with exercises).

Structure of specifications and general clauses; specifications for all trades; conditions of contract; agreements; building by-laws; estimates; reports; professional ethics.—Mr. Turner.

175. ENGINEERING LAW (24 lectures).

Instruction is provided with the Applied Science Fourth Year classes (see page 235).

G.—Drawing.

33, 34, 35, and 36, ARCHITECTURAL DRAWING (84 periods of three and four hours).

The work in this course is in direct connection with the lectures in History of Architecture

33. Drawings of the Classic orders, showing their application to other elements in architectural design, are prepared from the large models in the museum and from documents.—Mr. Carless.

34. Drawing of the Greek orders are prepared with special reference to their structural development and design. Classic buildgins are studied from documents in connection with the lectures on Cla ssicArchitecture. —Prof. Traquair.

35. In connection with the lectures on Mediæval Architecture, sketch plans, elevations and details of important mediæval buildings are set up from documents.—Pro. Traquair.

36. In connection withthe lectures on the Architecture of the Renaissance, important buildings are studied by drawing and sketching.—Prof. Traquair.

37. HISTORICAL DRAWING. The advance study of one or more historical buildings by means of large scale drawings.—Prof. Traquair.

38, 39, 40, 41. FREEHAND DRAWING (48 periods).

Drawing in pencil or charcoal from casts of architectural ornament, architectural fragments and parts of the figure.—Mr. Dyonnet.

18. ARCHITECTURAL GEOMETRY I (24 lectures and 24 periods).

Descriptive geometry; isometric and axometric projection ; shades and shadows; developed surfaces and intersection of solids.—Mr. Carless.

19. ARCHITECTURAL GEOMETRY II (24 lectures and 24 periods).

The practical application of descriptive geometry to masonry and joinery; perspective; the rendering of perspective drawings. Mr. Carless.

42 and 43. MODELLING (one period a week of two hours, extended over the Fourth and Fifth Years).

The student first studies form directly from nature, and later on conventionalizes the forms with which he has become familiar for decorative purposes. The Architectural museum affords many examples from different periods of the adaptation and abstraction of natural motifs in ornament. They are used to show the spirit in which to work out ornament, and are not copied directly. Models of design on which the students are engaged are also prepared, and casting is taught.—Mr. Dyonnet.

44, 45, 46, 47, 48, 49. An essay on an historical or theoretical subject is required from all students excepting those of the First Year. This essay is to be prepared during the session.

50. SUMMER WORK.

During the vacation following the close of the First, Second and Third Years, the students in Architecture are required to read and be prepared to pass an examination on a selected theoretical, æsthetical, or historical architectural work, and in addition to this, to spend at least five weeks in the office of some architect or contractor; the period of such employment to be certified by a letter from the employer. Students who for any reason approved by the Head of the Department find it impracticable to do office work, may submit thirty-five reasonably large free-hand sketches, rendered in any desired medium as an equivalent.

A summer school in sketching and measuring is attended by all students between the Second and Third and between the Third and Fourth Years, in the latter part of September, for the study of buildings in Canada and in the United States.

For summer reading, see page 209.

DEPARTMENT OF CHEMISTRY.

DIRECTOR:—R. F. RUTTAN.
PROFESSOR OF INORGANIC CHEMISTRY :—F. M. G. JOHNSON.
ASSOCIATE PROFESSORS :— NEVIL NORTON EVANS. OTTO MAASS. G. S. WHITBY.
ASSISTANT PROFESSORS :— A. R. M. MCLEAN. H. W. HATCHER.
DEMONSTRATORS :— J. DOLID. W. R. MCGLAUGHLIN. DOROTHY CHARLTON. P. G. HIEBERT. L. J. WALDBOUER. D. M. MORRISON. W. W. THOMSON. O. B. PHILLIPS. A. CAMBRON. G. W. HOLDEN.

Second Year Lectures.

51. GENERAL CHEMISTRY. The course includes the history, occurrence, properties and methods of preparation of the most important elements and compounds, with their industrial applications; classification; general laws and principles; and the fundamental theories of the science; together with a brief discussion of scientific method. Three hours a week for all students in Engineering.—Prof Evans.

Text-books :—Macpherson and Henderson, General Chemistry.

54. INORGANIC QUALITATIVE ANALYSIS. A course dealing with the principles of analytical chemistry—nature of solutions, precipitation, etc., explanatory of the work done in the laboratory (course 55). Five lectures a week for the first three weeks of the summer session.—Professor Evans.

Text-book :—N. N. Evans, Notes on the Theory of Qualitative Analysis. *Reference :*—Stieglitz, Qualitative Chemical Analysis.

Second Year Laboratory.

52. GENERAL CHEMISTRY LABORATORY. Practical work designed to accompany and illustrate the lectures of course 51. The course includes the construction and use of ordinary apparatus, the preparation and study of important elements and compounds, qualitative analysis, and simple quantitative determinations, both gravimetric and volumetric, including combining weights, standardization of solutions, hardness of water, etc. One period for all students of Engineering.—Professor Evans and Messrs. McGlaughlin, Wright and Shaw.

55. INORGANIC QUALITATIVE ANALYSIS LABORATORY.

A course of laboratory work, including preliminary experiments on known substances, the examination of unknown mixtures for base and acid radicals, methods of bringing substances into solution, and a study of the chemical reaction involved in these processes. Four weeks in the Summer School for students of the Chemical and Metallurgical Engineering courses. —Professor Evans and Miss Charlton and Mr. Thomson.

Text-book :—W. A. Noyes, Qualitative Analysis.

Third Year Lectures.

56. ORGANIC CHEMISTRY. A course in general elementary organic chemistry. Three lectures a week during the first term and two during the second term.—Dr. Ruttan.

Text-books :—Perkin and Kipping's *or* Remsen's Organic Chemistry.

58. PHYSICAL CHEMISTRY. An introductory course following the development of chemical theory, including vapour densities, molecular weights, the mass law and the phase rule.

Two lectures a week during the first term.—Dr. Maass.

Text-book :—Theoretical and Physical Chemistry, Bigelow.

59. INORGANIC QUALITATIVE ANALYSIS. A course explanatory of the work done in the laboratory. One lecture a week in the second term for Mining Engineers only.—Professor Evans.

Text-book :—N. N. Evans, Notes on the Theory of Qualitative Analysis.

61. INORGANIC QUANTITATIVE ANALYSIS. A course on the general principles involved in quantitative analysis. One lecture a week during the first term of the Third Year.—Dr. Johnson.

Text-book :—Cumming and Kay. *For reference:*—Treadwell's Quantitative Analysis.

Third Year Laboratory.

57. ORGANIC CHEMISTRY. A course on the preparation, detection and analysis of the commoner organic compounds. Two periods a week, in the second term.—Drs. McLean and Whitby, with Messrs. McGlaughlin, Dolid and Cambron.

Text-book :—Norris' Experimental Organic.

60. INORGANIC QUALITATIVE ANALYSIS. A course adapted to the requirements of Mining Engineers. Two periods a week in the second term. Professor Evans with Mr. W. Thomson and Miss Charlton.

Text-book :—W. A. Noyes, Qualitative Analysis.

62. INORGANIC QUANTITATIVE ANALYSIS. An extensive course on gravimetric and volumetric method. Three periods per week for Chemical Engineers (Course II).—Dr. Johnson and Messrs. Hiebert and Morrison.

Text-book :—Cunningham and Kay, Quantitative Analysis.

Fourth Year Lectures and Laboratory.

73. Food Chemistry. A course on the constitution and analysis of proteins, carbohydrates, fats and allied substances. The course also includes the estimation of food values, enzyme action. A course of one ecture per week and two laboratory periods during the second term. The laboratory work comprises the study of typical foodstuffs, and includes the use of the calorimeter, polariscope and refractometer in organic analysis. —Dr. Ruttan, Dr. Whitby, Mr. Dolid and Mr. Waldbouer.

Text-book :— Woodman's Food Analysis.

64. Advanced Organic Chemistry. The lectures will deal with the more complicated classes of carbon compounds, such as the carbohydrates, terpenes and alkaloids; the more complicated types of reaction, such as the Grignard reaction, the Claisen reaction, the reaction of aliphatic and hydroaromatic diketones; various theoretical conceptions such, as geometrical isomerism, partial valency, the strain theory. Two lectures per week.—Dr. Whitby.

Text-book :—Perkin and Kipping's Organic Chemistry. *For reference* :— Recent Advances in Organic Chemistry, Stewart; Advanced Organic Chemistry, Cohen; Organic Chemistry of Nitrogen, Sidgewick.

65. Advanced Organic Laboratory. The course will comprise the preparation of a number of representative organic compounds of a more complicated nature than those prepared in the Third Year, including dyes, nitro derivatives and examples of reactions, such as Perkin's, Friedel and Craft's, Skraup's and Grignard's. It will also comprise the quantitative determination of the elements and of typical groups in organic compounds; and also the identification of unknown organic substances. Four periods a week in the first term and two in the second.—Drs. Whitby and Maclean and Messrs. Dolid and Waldbouer.

The student is required during this course to take a complete course in gas analysis under Dr. Johnson.

66. Physical Chemistry. Two lectures a week on general physical chemistry, including the kinetic theory, thermo-chemistry, electron theory in chemistry, chemistry of radioactive substances, etc.

Students will be required to work problems dealing with the subject matter of the lectures.

Two laboratory periods a week in the second term are devoted to typical physico-chemical measurements and methods of analysis. —Dr. Maass, and Mr. Waldbouer.

Text-books :—Washburn's Principles of Physical Chemistry; Findlay's Physico Chemical Measurements.

For Reference :—Ramsay's Text-books of Physical Chemistry.

67. Inorganic Laboratory. The lectures deal with the special methods of analysis of iron and steel, alloys and water. One lecture and three periods a week in the first term and four periods in the second. —Dr. Johnson and Mr. Hiebert.

The laboratory work is a continuation of courses 61 and 62. A course in gas analysis is given in the second term, as well as studies in colloid chemistry and some advanced inorganic preparations.

For reference :—Lord and Demorest, Quantitative Analysis; Treadwell's Quantitative Analysis; Blair, Chemical Analysis of Iron; Ibbotson, Analysis of Steel Works Materials.

68. INDUSTRIAL CHEMISTRY, INORGANIC. A course, both theoreticsal and descriptive, on the more important inorganic chemical industries. Two lectures per week in the first term. Special lectures are given in this course by chemical engineers from outside the University.—Dr. Johnson.

69. INDUSTRIAL CHEMISTRY, ORGANIC. This course is given during the second half of the session, and includes the chemistry of paper and pulp, sugar, starch and glucose, soap and fats, distillation of wood and the purification of the products, etc. Two lectures per week in the second term. This course is given by Dr. Johnson, with special lectures by several chemical engineers from the city and district who are specialists in one or other of the industries.

70. APPLIED ELECTRO-CHEMISTRY. The laws of electrolysis and of solutions are studied from the standpoint of the osmotic theory. Primary and secondary batteries, electro-plating, polarisation and the preparation and electro-chemical behaviour of the rarer elements used in incandescent lamps are discussed. The more important technical processes are studied and typical substances prepared in the laboratory. Two lectures in the first term.—Dr. Maass.

For reference :—Allmond, Applied Electro-chemistry; Blount, Practical Electro-chemistry.

71. INORGANIC QUANTITATIVE ANALYSIS. A laboratory course specially designed for Mining Engineers. Four periods a week in the first term.—Dr. Johnson and Mr. Hiebert.

Text-book :—Lord and Demorest, Quantitative Analysis. *Forreference :*—Olsen's Quantitative Analysis.

72. ADVANCED INORGANIC CHEMISTRY. A course of lectures on inorganic chemistry, discussing the elements and their compounds in accordance with the general principles of physical chemistry.

Two lectures a week throughout the session.—Dr. Johnson.

74. HISTORY OF CHEMISTRY. A short course dealing with the development of chemistry from the historical standpoint. One lecture a week in the second term.—Dr. Maass.

75. COLLOID CHEMISTRY. Two lectures per week and a total of ten abora tory periods in second term.—Dr. Johnson.

DEPARTMENT OF CIVIL ENGINEERING AND APPLIED MECHANICS.

PROFESSORS :—H. M. MACKAY. E. BROWN. R. DE L. FRENCH.
ASSOCIATE PROFESSORS :—C. BATHO. H. M. LAMB.
LECTURERS :—G. J. DODD. R. E. JAMIESON.
ASSISTANT IN CHARGE OF TESTING LABORATORY :—S. D. MACNAB.
DEMONSTRATORS :—R. S. EADIE. —

Second Year.

81. MATERIALS OF CONSTRUCTION. Manufacture and properties of cast iron, wrought iron, crucible, bessemer and open hearth steel; principal alloys; considerations governing selections of materials; manufacture and properties of Portland and natural cements; limes; concrete; stone and brick masonry; principal kinds of timber used for engineering purposes; preservation of timber; discussion of standard specifications.

Required of all engineering students. One hour per week.—Prof. Mackay and Mr. Sproule.

Text-book :—Moore, Materials of Engineering.

83. MECHANICS. The general principles of statics and of the dyanmics of a particle are developed in the lectures, and numerous examples illustrating the application of mechanics to engineering problems are worked out.

The course includes the following :—*Statics* (analytical and graphical) comprising equilibrium of forces; funicular and force polygons; centre of gravity; bending moment and shear; forces in framed structures; friction; hydrostatics. *Dynamics* comprising work, power, energy; relative velocity; impact of jets; variable motion, both straight line and curvilinear (with graphic methods); curved track, conical pendulum, balancing; motion under variable force; simple harmonic motion (pendulums and oscillation of springs); velocity and acceleration in machines, inertia forces, crank effort diagrams; moment of inertia, fly-wheels, etc.

The mathematical courses in calculus are taken concurrently, and calculus methods are used freely. Four hours per week.—Prof. Brown, Dr. Batho, Prof. Lamb and Mr. Jamieson.

Reference books :—Morley, Mechanics for Engineers; Poorman, Applied Mechanics.

Third Year.

86. MECHANICS. The work of the Second Year course in mechanics is extended, and the dynamical equations for the motion of a rigid body in two dimensions are deduced. Numerous examples are worked in detail,

including problems on fly-wheels, kinetic energy of bodies having translation and rotation, oscillation of a rigid body about a fixed axis, impulse, etc. The elementary principles of the gyroscope are considered. Two lectures per week, first term.—Prof. Brown and Dr. Batho.

Reference book :—Worthington, Dynamics of Rotation.

87. STRENGTH OF MATERIALS. This course deals with the fundamental principles of the strength of materials. It includes the following:—Stress, strain, resilience, and the elastic properties of materials used in construction; bending moment and shearing force diagrams; strength, curvature, and deflection of beams; continuous beams; cantilever beams and the like; simple problems on rolling loads; reinforced concrete beams; the strength of shafting; spiral springs; columns; bending combined with tension or compression; elementary consideration of compound stresses; distribution of shearing stress on various sections, etc.

Required of all Engineering students. Two lectures per week during the session.—Professors Brown, Batho and Lamb.

Text-book :—Morley, Strength of Materials.

88. STRENGTH OF MATERIALS LABORATORY. The work is arranged to illustrate the principles of the lecture course in strength of materials (87), and includes the following:—Tension tests of various materials in 100 ton and 30 ton testing machines; determination of stress-strain diagrams by automatic recorders and by extensometers and scales; deflection of beams, wood and metal; torsion of shafts; deflection and vibration of spiral springs and torsional oscillations of wires; the moment of inertia of fly-wheels by oscillation and falling weight tests; determination of Young's modulus for various materials; complete test of Portland cement; efficiency of chain blocks, experiments on tension and twisting of wires; bending combined with torsion as in shafting; together with demonstrations on the large testing machines of tensile tests of various materials, the breaking of timberand reinforced concrete beams and small columns, the compressive strength of concrete, bricks, mortars, etc. Three hours per week, second term.—Prof. Brown, Dr. Batho, Mr. Jamieson, Mr. Eadie.

89. FOUNDATIONS AND MASONRY. Borings; bearing power of soils; piles and pile driving; concrete piles; footings; grillages; underpinning; foundations under water, cofferdam, open dredging, pneumatic and freezing processes; estimation of quantities from drawings; estimates of costs.

Required of Civil Engineering students. Four hours per week, second term.—Prof. Mackay, Mr. Dodd.

Text-book :—Foundations of Bridges and Buildings, Jacoby and Davis.

90. STRUCTURAL ENGINEERING. Problems in the design of beams, plate girders, columns, roof trusses, knee bracing, etc.; working drawings; reinforced concrete; estimates of quantities; estimates of cost. Required of students in Courses II, III, V, VI and VII. Four hours per week, second term.—Prof. Lamb and Mr. Jamieson.

Reference books:—Ketchum's Structural Engineer's Handbook; Morris, Structural Design; Cambria Steel.

91. MILL BUILDINGS. The design and construction of mill buildings; purpose and arrangement of plant, layout of buildings, loads; steel framed buildings, design of roof-trusses, beams and columns, details and shop-drawings; reinforced concrete buildings, design of slabs, beams and columns, types of reinforcement, forms, methods of construction, estimate of quantities and of costs; wood framed buildings; foundations, steel grillages, reinforced concrete spread foundations.

Required of Fourth Year Mechanical Engineering students.—Prof. Lamb.

Reference books:—Ketchum, Steel Mill Buildings; Tyrell, Mill Buildings; Hool, Reinforced Concrete Construction.

92. RAILWAY ENGINEERING. The locomotive and its work; locomotive and grade problems; effect of distance, rise-and-fall and curvature on train mile costs; estimate of probable receipts and expenditures; economics of location, reconnaissance, preliminary, and location surveys; turnouts, yards and terminals; details of construction; materials of construction. Required of Civil Engineering students. Two hours per week. —Prof. Lamb.

92a. RAILWAY ENGINEERING. A briefer course than the above required of students taking Highway Engineering, and alternative with 92. Two hours per week, first term.—Prof. Lamb.

93. RAILWAY ENGINEERING. The paper location of a railway, map, profile, earthwork, mass diagram, overhaul, velocity profile, bill of material and cost estimate of same; the design of a freight yard, detailing of switches and complicated lay-outs and bill of track material. Required of Civil Engineering students. Six hours per week. Prof. Lamb.

93a. RAILWAY ENGINEERING. A briefer course than the above, required of students taking Highway Engineering, and alternative with 93. Six hours per week, first term.—Prof. Lamb.

97. HYDRAULICS. The fundamental principles of hydraulics are considered and applied to problems on the discharge of orifices, notches, weirs, pipes and open channels under varying conditions. The theory of impact of jets and its application to turbines is also dealt with. Required of Civil Engineering students in the Third Year and of Mechanical and Electrical Engineering students of the Fourth Year. Two hours per week, first term.—Prof. Brown.

Text-book:—Hydraulics and Its Applications, Gibson.

98. HYDRAULIC LABORATORY. The course is illustrative of the principles considered in course 97, and is taken concurrently. The work includes the following experiments:—Measurement of discharge from orifices, notches and pipes, both straight and bent, to determine hydraulic

coefficients; pressure of jets impinging on vanes; tests of Venturi meter, hydraulic ram, Pelton wheel, Girard impulse turbine, etc. Three hours per week, first term.—Prof. Brown, Dr. Batho and staff.

82. SANITARY SCIENCE. Basic principles of sanitation underlying the design of works for water supply, sewerage, the heating, lighting and ventilation of buildings, etc. Alternative with Map Projections 351. Four hours per week, first term.—Dr. Starkey.

85. HIGHWAY ENGINEERING. Vehicular traffic and its requirements; methods of financing; economics of location; surveys; distance, grade and curvature; drainage; earthwork; paving materials, manufacture and use; maintenance; bridges, culverts, sidewalks and other accessories; designs and estimates. Alternative with 92. Eight hours per week, second term. Prof. French.

Text-book :—Agg's Construction of Roads and Pavements.

Fourth Year.

94. THEORY OF STRUCTURES. The analysis of statically determinate framed structures under fixed and moving loads; distortion of framed structures; swing spans; braced arches and arched ribs with two and three hinges; hingeless arches in concrete and reinforced concrete; frames with redundant members.

Required of Civil Engineering students. Four hours per week, first term ; eight hours per week, second term.—Prof. Mackay, Mr. Jamieson.

Reference books :—Johnson, Bryan and Turneaure's Modern Framed Structures; Marburg, Stresses in Structures.

95. STRENGTH OF MATERIALS. The course includes the following:—The bending and deflection of beams loaded in any manner; beams continuous over several supports at the same or different levels; distribution of shear and deflection due to shear; principle of work applied to deflection of beams, trussed beams and some statically indeterminate problems; bending of curved bars, and of unsymmetrical sections, such as single angles, etc.; elastic strains; relation between elastic constants; strength of thick shells; earthwork theories; suspension cables; the design of floor and column systems for reinforced concrete buildings (including a critical study of standard specifications); retaining walls, etc.

Required of Civil Engineering students. Two lectures per week during the first term, and one per week during second term, with the equivalent of one-half laboratory period per week throughout the session at times appropriate to the progress of the course.—Prof. Brown.

Text-books :—Strength of Materials, Morley; Reinforced Concrete, Taylor and Thompson, or Reinforced Concrete Construction, Vols. II and III, Hool, or Reinforced Concrete Handbook, Hool and Johnson.

96. BRIDGE DESIGN. The reason governing the selection of a particular type of bridge; discussion of the loads to which the bridge will be subjected; calculation of the stress in the several members; determination

of the sectional areas and forms of the members; design of the connections; preparation of complete drawings.

Required of students in Civil Engineering. Eight hours per week. —Prof. Mackay and Mr. Dodd.

Reference books:—Kirkham's Structural Engineering; Ketchum's Structural Engineer's Handbook; Waddell's Bridge Engineering.

96a. BRIDGE DESIGN. A slightly briefer course than 96. Required of students taking the Municipal Alternative.—Prof. Mackay and Mr. Dodd.

99. HYDRAULIC MACHINES. The course deals mainly with the development of the modern turbine and centrifugal pump and includes the following general topics:—Application of the principles of hydraulics in explanation of the functions of the various parts of the machines; special problems encountered under different conditions; characteristics of different types and method of interpreting results of tests on small models; essential features and mechanical details of typical turbines and pumps; principal hydraulic formulæ underlying design; the hydraulic accumulator; inertia effects in reciprocating machines, etc. Two hours per week, second term.—Prof. Brown.

Reference books:—Hydraulics and Its Applications, Gibson; Water Power Engineering, Mead; Proceedings of Engineering Societies.

Text-books:—Hydraulics and Its Applications, Gibson.

100. HYDRAULICS AND LABORATORY. A short course embodying the hydraulic principles outlined under courses 97 and 98 will be given in the first term. There will be one lecture per week, and six or more laboratory periods at hours to be arranged. Required of Mining, Metallurgical and Chemical Engineering students of the Fourth Year.—Dr. Batho.

101. MUNICIPAL ENGINEERING. Fundamental principles of water supply, sewerage, sewage disposal, highway engineering and the treatment of garbage and rubbish. Required of Civil Engineering students not taking Municipal alternative. Two hours per week, first term, and five hours per week, second term.—Prof. French.

Text-books:—Turneaure and Russell's Public Water Supplies; Metcalf and Eddy's Sewerage and Sewage Disposal.

102. WATER SUPPLY AND SEWERAGE.

(a.) *Water Supply.* Quantity, quality and pressure; rainfall and evaporation; runoff, pumping machinery; storage; dams, aqueducts, distribution systems, etc.; appurtenances; purification systems; fire service; construction materials and methods; designs and estimates.

(b.) *Sewerage.* Quantity of sanitary sewage and of storm water; sewerage mains and appurtenances; construction methods and materials; designs and estimates.

(c.) *Sewage Disposal.* Characteristics of sewage; disposal by dilution; screening and sedimentation; sludge; bacterial methods; costs and results; designs and estimates. Required of students taking Municipal alternative. Nine hours per week.—Prof. French.

Text-books :—Turneaure and Russell's Public Water Supplies; Metcalf and Eddy's Sewerage and Sewage Disposal.

103. Waste Disposal. Characteristics of civic wastes; garbage, rubbish and ashes; disposal methods, dumping. land treatment, incineration, reduction; economic aspects; designs and estimates. Required of students taking Municipal alternative. One hour per week, first term. —Prof. French.

Text-book :—Hering and Greeley's "Collection and Disposal of Municipal Refuse.

104. Civic Administration. This course is designed to emphasize the connection between the work of the municipal engineer and other civic activities. Such subjects as civic government and finance, education, recreation and charities and correction are discussed, as well as town planning and other engineering work of minor importance not covered in other courses. Required of students taking Municipal alternative. One hour per week, first term.—Prof. French.

Text-book :—No regular text-books are prescribed, but free use is made of various government bulletins and of current periodical literature.

Graduate Courses.

105. Statically Indeterminate Structures. General methods of stress analysis; influence lines; application to braced arches, rectangular frameworks, etc.; theory of riveted joints; columns with intermediate and lateral loads, etc. Two lectures and about six hours' problem work per week, one term.—Dr. Batho.

106. Technical Elasticity. The general equations of elasticity with various applications (special attention being paid to approximate numerical solutions); strength of flat plates, etc.; torsion of thin tubes and prisms of non-circular section; the determination of stress distribution by means of polarised light; elastic stability; vibration of structures. Two lectures and about six hours' problem work per week, one term.—Dr. Batho.

107. Secondary Stresses. Secondary stresses due to rigidity of joints, deflection of floor beams, eccentric connections, latticing, etc.; critical discussion of specifications in the light of tests. Two lectures and about six hours' problem work per week, one term.—Prof. Mackay.

108. Reinforced Concrete Arches. Preliminary design; development of influence lines; unsymmetrical arches; elastic piers; economics of concrete arches, etc. One lecture and about six hours' problem work per week, one term.—Prof. Mackay.

109. (a) Aerodynamics. Fluid motions; the principles of flight, scale effect, experimental methods and results; prediction of performance; equations of motion: stability of aircraft; propellers, etc.

(b) Structural Design of Aircraft. Loading conditions during flight; detailed calculation of structural strength.—Dr. Batho.

110. HYDRAULICS. General principles of hydrology in relation to power development; stream gauging and use of records; flow in streams and in open channels of regular form; effect of dams and obstructions; backwater computations; the principles of hydraulics as applied to modern turbines; general trend of turbine development; turbine testing and characteristics; special problems such as pressure surges in conduits; general consideration of water power plants, including the study of plants in operation.—Prof. BROWN.

DEPARTMENT OF DESCRIPTIVE GEOMETRY AND FREEHAND DRAWING.

ASSOCIATE PROFESSOR :—HENRY F. ARMSTRONG.

DEMONSTRATORS :—J. R. WINDSOR. G. F. ALBERGA. P. G. GAUTHIER. G. THOMSON.

This Department provides a general course in drafting office methods and a training in the groundwork necessary to prepare the student for the work required in the Engineering courses of the Third and Fourth Years. The accurate use of drawing instruments is practised and study is made of the various projection methods commonly employed. The problems in Descriptive Geometry are especially designed to develop the power of mentally picturing unseen objects and grasping groups of details.

First Year.

341. DESCRIPTIVE GEOMETRY. Geometrical methods; plane figures; areas; paths of points moving in planes, etc.; projections of points, lines, plane figures and solid objects; shadows, etc.

Three hours per week.—Professor Armstrong.

Text-books :—Geometrical Drawing, by H. F. Armstrong; Descriptive Geometry, by H. F. Armstrong.

342. FREEHAND DRAWING. The object of this course is to train the eye to observe and the hand to record the essential characteristics and proportions of objects by means of sketches and diagrams of machines, etc., and to prepare dimensioned sketches from which to make scale drawings.

One hour and a half per week.—Professor Armstrong.

343. LETTERING. Types and titles such as are chiefly in use in drafting offices, including single-line, block and Roman lettering, and stencils.

One hour and a half per week.—Professor Armstrong.

Second Year.

345. DESCRIPTIVE GEOMETRY AND PERSPECTIVE. Intersections of surfaces; intersecting planes; tangent planes; axometric, including isometric, projections; perspective projection.

Three hours per week.—Professor Armstrong.

Text-book:—Descriptive Geometry, Henry F. Armstrong.

ENGLISH

ASSOCIATE PROFESSOR:—G. W. LATHAM.

131. ENGLISH COMPOSITION. In view of the importance of accuracy of expression for those engaged in scientific or professional work, a course in English composition is prescribed for all undergraduates of the First Year. Students will be assigned to a section which will meet semi-weekly for practice and instruction in composition, and in addition will be called upon from time to time for individual conferences with the instructor, at which conferences such advice and assistance will be given as may seem advisable.

Students coming to McGill from schools or colleges where an equivalent amount of English instruction is given may apply for exemption from the above course. Applications for such exemption should be addressed to the Dean of the Faculty of Applied Science not later than September 15th, and should be accompanied by certificates of standing and a certified syllabus of the courses taken. Students who consider themselves qualified for exemption but cannot produce satisfactory certificates as above, may come up for a special exemption examination to be held on Saturday, October 7th, 1922, at 2 p.m. Candidates who present themselves for this examination in 1922 should be thoroughly prepared in Aydelotte's English and Engineering, Sections VII to XVII inclusive.

In connection with this course the following text-books will be used:—Lomer and Ashmun's The Study and Practice of Writing English (Houghton Mifflin); Aydelotte's English and Engineering (McGraw-Hill Publishing Co.).

132. SUMMER READING. Second Year. (See page 209.)

133. SUMMER READING OR ESSAY. Third Year. (See page 210.)

134. SUMMER READING. Fourth Year. (See page 211.)

DEPARTMENT OF ELECTRICAL ENGINEERING.

PROFESSOR :—L. A. HERDT
ASSOCIATE PROFESSOR :—C. V. CHRISTIE.
ASSISTANT PROFESSOR :—E. G. BURR.
LECTURER :—G. A. WALLACE.
DEMONSTRATORS :—W. SCHIPPEL.
SESSIONAL DEMONSTRATOR :—J. W. BAIN.

Third Year.

113. ELECTRICAL ENGINEERING. The theoretical consideration of current flow in circuits; the laws of electro-magnetism and of the magnetic circuit; the theory and operating characteristics of direct current machinery; the principles of alternating current machinery. Required of students in Electrical Engineering. Fours hours per week.—Prof. Christie.

Text book :—Christie's Electrical Engineering.

114. ELECTRICAL ENGINEERING LABORATORY. Preparation of reports; construction, handling and protection of electrical apparatus; use of instruments and precision of measurements; predetermination of the characteristics of electrical machinery; special and shop testing.

Tests are made in the Laboratory on:—Current flow in circuits; metering and controlling devices, generators, motors, boosters, balancers and motor generator sets; arc and incandescent lamps; reflectors. These tests are intended to illustrate the principles of action and the limits of the proper use of the apparatus. Students are furnished with special laboratory notes. Required of students in Electrical Engineering. Laboratory, six hours per week. Problems, two hours per week.

111. ELEMENTS OF ELECTRICAL ENGINEERING, for Third Year students in Mechanical Engineering and Fourth Year students in Chemical, Civil, Metallurgical and Mining Engineering.

A general course in electrical engineering, treating of the laws of electro-magnetism; continuous and alternating current flow in various circuits; characteristics of direct and alternating current machinery; the fundamental principles of electric lighting, power distribution and electric traction. Two hours per week.—Mr. Wallace.

Text-books :—Gray's Principles and Practice of Electrical Engineerin

112. ELECTRICAL ENGINEERING LABORATORY, for Third Year students in Mechanical Engineering and Fourth Year students in Chemical, Civil, Metallurgical and Mining Engineering.

Includes tests of direct current metering and controlling devices, dynamos, motors, boosters, motor generators and constant current machines; experiments of variable current flow in circuits; tests of alternators, synchronous motors and converters, induction motors and transformers, etc. Three hours per week.

Fourth Year.

117. ELECTRICAL ENGINEERING. The treatment of alternating current circuits by vector diagrams and vector equations; the theory and operating characteristics of alternating current machinery. Required of students in Electrical Engineering. Three hours per week.—Prof. Christie.

Text-book :—Christie's Electrical Engineering.

118. ELECTRICAL ENGINEERING LABORATORY. Tests are made in the laboratory on alternators, synchronous motors and converters, compensators, induction motors, transformers, frequency and phase changing apparatus, potential regulators, rectifiers, etc. Students are furnished with special laboratory notes. Required of students in Electrical Engineering. Laboratory, nine hours per week.

120. ELECTRIC LIGHTING AND POWER DISTRIBUTION. The design and operation of power plants and substations. Transmission and distribution systems are taken up under the following heads:—Selection of generators, transformers, switches and auxiliary apparatus with a study of their characteristics and limitations; wiring diagrams and switchboard design; line design and construction, selection of towers, insulators and conductors, calculation of sags and spans; high voltage and transient phenomena; the protection of overhead lines, cable systems and station apparatus; industrial applications of electrical apparatus; financial considerations. This subject is required of students in Electrical Engineering. Two hours per week, first term.—Dr. Herdt.

Text book :—Standard Handbook for Electrical Engineers.

121. ELECTRIC TRACTION. Urban, inter-urban and main line electrification is taken up under the following heads:—Choice of system and apparatus; calculation of motor rating and car equipment; overhead and track construction; methods of control braking and regeneration; storage batteries and boosters; financial considerations.

This subject is required of students in Electrical Engineering. Two hours per week, second term.—Dr. Herdt.

Text-book :—Standard Handbook for Electrical Engineers.

122. ELECTRICAL DESIGN. The electrical design of direct and alternating current machinery. Special attention is paid to the limitations of the different types of machines and to the preparation of specifications. Required of students in Electrical Engineering. Lectures, two hours per week. Problem work, three hours per week.—Prof. Christie.

Text-book :—Gray's Electrical Machine Design.

123. APPLICATIONS OF ELECTRICITY. Lectures on industrial and general applications of electric power, the electrical supply systems for industrial power and lighting; special problems of plant design; special problems of lighting in electrical systems; special problems of electrical transmission; electrolysis mitigation for electric railways. Lectures, two hours per week, second term. Drafting room, two hours per week. —Mr. Burr.

124. Electrical Photometry and Illumination. Electric light production; photometry; illumination; principles of interior and street illumination. First term. Lectures, two hours per week. Drafting room, two hours per week.—Mr. Burr.

DEPARTMENT OF GEOLOGY AND MINERALOGY.

Professor:—{Frank D. Adams. / J. Austen Bancroft.}

Associate Professor of Mineralogy:—R. P. D. Graham.

LeRoy Fellow in Geology:—A. W. Carlyle

Sessional Lecturer:—John A. Dresser.

Sessional Lecturer on Palæontology:—To be Appointed.

Third Year.

141. General Geology. The lectures will embrace a general survey of the whole field of geology and will be introduced by a short course on mineralogy. Especial attention will be devoted to dynamical geology and to historical geology, including a description of the fauna and flora of the earth during the successive periods of its past history, as well as to the economic aspects of the subject.

The lectures will be illustrated by the extensive collections in the Peter Redpath Museum, as well as by models, maps, sections and lantern slides. In addition to the lectures there will be a demonstration each week.—Dr. Adams.

Text-book:—Cleland, Geology, Physical and Historical.

142. Mineralogy. The lectures and demonstrations, illustrated by specimens and models, deal mainly with the description and means of identification of species, special attention being paid to the ores and economic minerals and to those which are important as rock constituents. The earlier lectures are devoted to a brief discussion of the geometrical and physical properties of minerals; their chemical composition; calculation of formulæ, etc.; and the principles of classification.—Prof. Graham.

143. Determinative Mineralogy. Laboratory practice in blow-pipe analysis and its application to the determination of mineral species. —Prof. Graham.

Fourth Year.

146. Petrography. The modern methods of study employed in petrography are first described, and the classification and description of rocks is then taken up.

In addition to the lectures, one afternoon a week during the second term will be devoted to practical work in the petrographical laboratory. —Prof. Graham.

147. Advanced Petrography. This is a more advanced course than 146. In addition to the lectures, an afternoon throughout the year. will be devoted to practical work in the petrographical laboratory.—Dr. Bancroft.

Text-book :—Harker's Petrology for Students.

The petrographical laboratory is open to Fourth Year Mining students.

148. Ore Deposits and Economic Geology. The nature, mode of occurrence and classification of ore deposits will first be taken up. A series of typical occurrences will then be described and their origin discussed. The more important non-metallic materials, *e.g.*, fuels, clays, building stones, etc., will be similarly treated, as well as questions of water supply, artesian wells, etc. The structure of the earth's crust, more especially with reference to folding, faulting and igneous intrusion in their bearing upon mining, will then be considered, and the course will close with a discussion of the methods employed in carrying out geological and magnetic surveys and in the construction and interpretation of geological maps and sections

Dr. Bancroft will lecture on economic geology in the first term, and Dr. Adams on ore deposits in the second term.

Text-books :—Geikie, Outlines of Field Geology; Kemp, Ore Deposits of the United States and Canada; Lindgren, Mineral Deposits; Beck and Weed, The Origin and Nature of Ore Deposits.

Books of reference :—The Reports of the Geological Survey of Canada and the Publications of the U.S. Geological Survey.

149. Geology of Canada. A general description of the geology and mineral resources of the Dominion.—Dr. Bancroft.

151. Crystallography. A short course of lectures for students in chemistry, with laboratory practice in the measurement and drawing of crystals; calculation of axial ratios, etc.; use of the polarising microscope, axial angle apparatus, etc.—Prof. Graham.

152. Historical Geology. This is a continuation of course 141, and will consist of lectures, colloquia and museum work extending throughout the session.—Dr. Bancroft.

153. Field Work. The students in mining will receive a course of instruction in geological mapping and field work, extending over one week—in connection with the summer school of mining.—Dr. Bancroft and Prof. Graham.

Note.—Students of the Mining and Chemistry courses take all the mineralogy of the Third Year. Chemistry students, in addition to the geology of the Third Year, may take the mineralogy of the Fourth Year.

LAW AND ECONOMICS.

ASSISTANT PROFESSOR OF ECONOMICS :—B. K. SANDWELL.
LECTURER ON ECONOMICS :—FREDERICK B. BROWN.
LECTURER ON LAW :—J. W. WELDON.

171. ECONOMICS. This course is intended to give a general survey of the economic functions of society as they will present themselves to the engineer. The lectures will deal with the production and distribution of wealth; the means by which these processes are effected; the means by which they are controlled and regulated by the state or the community; the various theories concerning their operation and regulation; their effect on society; labor and capital; theories of money and credit; prices; public finance and taxation. Two hours per week in the second term of the Third Year.—Mr. Sandwell.

172. ENGINEERING ECONOMICS. This course is intended to familiarize the engineering student with the business aspect of his profession. With this in view, lectures will be given on the subjects of property and its transfer; money and credit; stocks and bonds; partnerships and corporations; the banking system; clearing house and trust companies; the formation, organization and financing of companies; operating costs and fixed charges; depreciation and obsolescence; analysis of balance sheet and of profit and loss accounts; valuations; estimates; specifications and contracts; industrial organization; employment methods; systems of remuneration; location and planning of industries. Two hours per week in the first term of the Fourth Year.—Mr. Brown and Mr. Sandwell.

175. LAW FOR ENGINEERS. This course is intended to present such an outline of the law as will be useful to engineers and business men. One hour per week in the Fourth Year.—Mr. Weldon.

DEPARTMENT OF MATHEMATICS.

PROFESSOR :—D. A. MURRAY.
ASSOCIATE PROFESSOR :—C. T. SULLIVAN.
LECTURERS:— G. J. DODD. R. S. EADIE. R. E. JAMIESON.

First Year.

191. GEOMETRY. Solid geometry and geometrical conic sections. First term.—Dr. Murray, Dr. Sullivan, Mr. Dodd, Mr. Jamieson.

Text-book:—Hall and Stevens' School Geometry, Parts I-VI (Macmillan.)

192. ALGEBRA. Miscellaneous theorems and exercises, exponential and other series, properties and solution of higher equations, complex

numbers, graphical algebra with an introduction to analytic geometry, indeterminate forms, limits, derivatives, slopes of curves. First and second terms. Dr. Murray, Dr. Sullivan, Mr. Dodd, Mr. Jamieson.

Text-books:—Hall and Knight's Higher Algebra (Macmillan & Co.); Tanner and Allen's Analytic Geometry (American Book Co.) (Macmillan).

193. TRIGONOMETRY. Plane and spherical. Second term. Dr. Murray, Dr. Sullivan, Mr. Dodd and Mr. Jamieson.

Text-book:—Murray's Plane and Spherical Trigonometry, with tables. (Longmans).

194. MECHANICS. An elementary course in dynamics, statics, and hydrostatics. First and second terms. Dr. Sullivan, Mr. Dodd, Mr. Eadie, Mr. Jamieson.

Text-book:—Loney's Mechanics and Hydrostatics for Beginners (Cambridge University Press).

Second Year.

197. ANALYTIC GEOMETRY. The point, straight line, circle, parabola, ellipse and hyperbola, elements of geometry of three dimensions. First Year (latter part of second term), and Second Year (first term). The Second Year work begins with the circle. Dr. Murray, Dr. Sullivan Mr. Eadie.

Text-book:—Tanner and Allen's Analytic Geometry (American Book Co.).

198. CALCULUS. Differentiation of functions of one or more variables, successive differentiation, tangents, etc., curvature, maxima and minima, integration, with application to areas, volumes, moments of inertia, etc. First and second terms. Dr. Murray, Dr. Sullivan, Mr. Eadie.

Text-book:—Murray's Differential and Integral Calculus (Longmans).

Third Year.

201. CALCULUS. Elementary differential equations. Prescribed for Electrical Engineering students of the Third Year; optional for all others. First and second terms. Dr. Murray.

DEPARTMENT OF MECHANICAL ENGINEERING.

PROFESSOR:—C. M. McKERGOW

ASSOCIATE PROFESSOR:—A. R. ROBERTS.

LECTURERS:— J. A. COOTE. R. H. PATTON. C. U. VESSOT.

DEMONSTRATORS:— H. A. CHISHOLM. G. THOMPSON. W. J. MUIR.

SHOP INSTRUCTORS:— G. WOOLEY. J. STEWART. H. LANE. W. GATEHOUSE.

First Year.

211. MECHANICAL DRAWING. Instruction in the use of drawing instruments and materials, dimensioning, conventions and standards; preparation of working drawings and tracings of machine details and the detailing of assembly drawings. Required of all students, except architects. Six hours per week. Professor Roberts and assistants.

212. CARPENTRY AND WOOD-TURNING. Sharpening and care of wood-working tools; sawing, planing and paring to size; preparation of flat surfaces, parallel strips, and rectangular blocks; construction of the principal joints employed in carpentry and joiner work, such as end and middle lap joints, end and middle mortise and tenon joints, mitres, dado and sash joints; dovetailing; scarfing; joints used in roof and girder work; wood-turning; use of wood-turning tools. Required of all students, except architects. Three hours per week, sixteen weeks. Mr. Wooley.

213. SMITH-WORK. The forge and its tools; use and care of smiths' tools; management of fire; use of anvil and swage-block; drawing taper, square and parallel work; bending, upsetting, twisting, punching, and cutting; welding and scarfing. Required of all students, except architects. Three hours per week for eight weeks. Mr. Stewart.

214. FOUNDRY WORK. Moulders' tools and materials used in foundry work; the cupola; the brass furnace; preparations of moulding sand; boxes and flasks; core-making; use of core-irons; bench moulding; blackening, coring and finishing moulds; vents, gates and risers; floor moulding; open sand work; melting and pouring metal; mixtures for iron and brass casting. Required of all students, except architects. Three hours per week for eight weeks. Mr. Lane.

215. SHOP METHODS. Brief study of woods and of hand and machine tools used in wood-working; manufacture and working of iron and steel; forge and forge tools; welding; stock calculations; steam-hammer work;

drop forging; cupola practice; moulders' tools; elementary moulding and core-making. Required of all students, except architects. One half-hour per week. Mr. Vessot.

220. MACHINE-SHOP WORK. Exercise in chipping; preparation of flat surfaces; filing to straight edge and surface plate, scraping, screwing and tapping; use of scribing block and surface gauge; marking off work for lathes and other machines; turning and boring cylindrical work to gauge; surfacing; screw-cutting and preparation of screw-cutting tools; machining flat and curved surfaces on the planing and shaping machines; drilling and boring; cutting angles and speeds; dressing and grinding tools. Required of all Engineering students. Three hours per week for sixteen weeks. Mr. Gatehouse.

Second Year.

218. MECHANICS OF MACHINES. (Second term.) *Kinematics of machines.*—Constrained motion; kinematic pairing; velocity and acceleration in mechanisms; centrodes; analysis and classification of simple mechanisms, including the quadric crank chain, the slider crank chain and various wheel trains; design of involute and of cycloidal wheel-teeth. Professor McKergow.

Text-book:—Durley's Kinematics of Machines (Wiley).

221. SHOP METHODS. Tools; tool steels; forging, hardening and tempering; case hardening; grinding and abrasives; brazing and soldering; modern welding processes; fits and fitting; interchangeable processes of manufacture; lathe construction, adjustments and practice. Required of all Engineering students. One hour per week. Mr. Vessot.

Text-book:—Elements of Machine Work, R. H. Smith.

Third Year.

224. MECHANICS OF MACHINES. Alternative with course (258), Accounting. Relative motion and displacement; crank effort diagrams, fly-wheels and inertia forces; the mechanism of the simple slide valve and of expansion valves; solution of valve setting problems; the function and dynamics of governors; elements of engine balancing; friction and lubrication. Required of students in Mechanical and Electrical Engineering. Three hours per week. Mr. Coote.

Text-books:—Durley's Kinematics of Machines(Wiley); Ewing's Steam Engine (Camb. Univ. Press).

225. MACHINE DESIGN. Principles of the strength of materials as applied to the design of the part of machines; fastenings used in machine construction, bolts, screws, keys, cotters, rivets, and riveted joints; journals and bearings; shafts and couplings. Required of students in Mechanical and Electrical Engineering. Two hours per week. Professor Roberts.

Text-book:—Unwin's Machine Design, Part I (Longmans). *Book of reference*:—Spooner's Machine Design (Longmans).

226. MECHANICAL ENGINEERING. General course in Mechanical Engineering of Power Plants and Prime Movers.

Fuel and combustion, steam boilers and steam production; corrosion and defects of boilers; boiler plants and accessories, principles of selection and arrangement; the steam engine; estimation of power developed; economy of steam machinery; the indicator; condensers, pumps and accessories; steam turbines; principles of design in steam plants; gas engines and gas producer plants, their selection, economy and arrangement; general conditions governing location and design of power installations. Required of all Engineering students, except those in Mechanical Engineering. Two hours per week.—Professor McKergow.

Text-book:—Duncan, Steam and Other Engines (Macmillan).

227. MECHANICAL ENGINEERING. Fuel and combustion; steam boilers and steam production; boiler installation and operation; the indicator; the steam engine, steam distribution and economy; steam turbines; condensers and auxiliary machinery in steam plants; gas engines and gas producer plants; compressed air and refrigerating machinery. Required of students in Mechanical Engineering. Three hours per week.—Professor McKergow.

Reference book:—Ripper, Heat Engines (Longmans).

228. MECHANICAL ENGINEERING LABORATORY. Testing and calibration of indicators, brakes and other measuring instruments; investigation of the operation of brakes, dynamometers, and governors; test to determine the efficiency of belt and other transmission gearing; the properties of lubricants; the economy and performance of a steam engine and boiler, of a gas engine, of an air compressor, and of a pump. Required of all Engineering students, except those taking the Electrical Engineering course. Three hours per week.—Professor McKergow and assistants.

Reference book:—Carpenter, Experimental Engineering.

223. MECHANICAL ENGINEERING LABORATORY. First term, course same as 228; second term, experimental work on the relative value of throttling and expansion governors; effect on the economy of steam engine of changing from simple to compound, triple, or quadruple expansion; the testing of steam boilers, producer gas engines, air compressors, steam turbines, and a complete steam power plant test. Required of students in Electrical Engineering. Six hours per week in first term and three hours per week in second term.—Professor McKergow and assistants.

Reference book:—Carpenter, Experimental Engineering.

229. THERMODYNAMICS. Fundamental laws and equations of thermodynamics; their application to gases and to saturated superheated vapours; efficiency of ideal heat engines; properties of steam, and elementary

theory of the steam engine; elementary theory of gas and hot air engines. Required of Third Year students in Mechanical and Electrical Engineering. Two hours per week.—Professor Roberts.

Text-books:—Ewing, The Steam Engine and Other Heat Engines (Camb. Univ. Press); Marks and Davis, Steam Tables. *Reference book:*—Ennis, Thermodynamics Applied to Engineering.

230. MECHANICAL DRAWING. Exercises in making sketches of machine parts and in preparing working drawings and tracings from them. This work may be required of Mechanical Engineering students. One week during summer term, between the Second and Third Years.—Mr. Coote.

231. MECHANICAL DRAWING. This course is supplementary to the course in machine design and consists of exercises in design and draughting of fastenings, machine parts and simple machines. Required of Mechanical Engineering students. Six hours per week for the first term and three hours per week for second term.—Mr. Coote.

232. MECHANICAL DRAWING. A course similar to 231, but less extended. Required of Electrical Engineering students. Three hours per week.

233. SMITH WORK. Tool forging and tempering, using carbon and high speed steels; making lathe and planer tools; taps, dies, drills, and tools for the forge; special welding. One week during the summer term, prior to work in Third Year session. Required of Mechanical Engineering students.—Mr. Stewart.

234. FOUNDRY WORK. Moulds requiring a higher degree of skill and judgment than in elementary course; special methods of strengthening the mould; coating for smooth surfaces on castings; methods of avoiding defects; cupola charging and operating; core mixtures and core making; coring models. For same period as 233. Required of Mechanical Engineering students.—Mr. Lane.

235. PATTERN-MAKING. Use of pattern-makers' tools; elements of pattern-making; allowances to be made for draught and for contraction in moulding and casting; use of contraction rule; preparation of prints and plain core-boxes; exercises in paring and turning; construction of patterns and core-boxes for pipes, flanges, elbows, tees and valves; more difficult exercises in pattern-making, including built-up patterns and face-plate work; gear and wheel patterns. Required of students in Mechanical Engineering. One week during summer term.—Mr. Wooley.

236. MACHINE SHOP. Lathe work; marking off; centering; turning and boring; radial facing; filing; grinding and polishing; internal and external screw cutting; change gear calculations; taper turning and bench work. Required of students in Mechanical Engineering. Three hours per week for one term.—Mr. Gatehouse.

237. SHOP PROCESSES AND MANAGEMENT. Design of standard cutting tools, determination of proper cutting speeds and feeds in lathe

work; grinding, polishing and lapping; broaching; generating gear teeth; precision methods. Organising a factory for efficient production; scientific management; time and motion study, etc. Required of students in Mechanical Engineering. One hour per week.—Mr. Coote and Mr. Vessot.

258. ACCOUNTING. Alternative with Mechanics of Machines (224). This course is designed to give engineering students the fundamental principles of bookkeeping and accounting so that they will be in a position to deal intelligently with the books of account and the financial statements met with in engineering work, particularly in manufacturing. One hour lecture and one problem period per week.—Mr. Coote.

Fourth Year.

240. MECHANICS OF MACHINES. (a) *Valve gears and governors.* Gyrostatic action in machines; further treatment of engine governors; knocking and shocks in reciprocating machinery; valve gears.—Prof. McKergow.

(b) *Aeronautics and Aerodynamics.* The principles underlying the stability and weight-supporting power of curved and plane surfaces driven through the air at high velocities, together with the power required to maintain these velocities, are studied, and the designs of such machines used for purposes of illustration. Required of students in Mechanical Engineering. Three hours per week.—Dr. Batho.

Reference books:—Dalby's Balancing of Engines; Spangler's Valve Gears.

241. DESIGNING. The complete design of an engine, a pump, or a machine tool, is worked out, and the requisite working drawings and tracings are prepared. Required of students in Mechanical Engineering. Three hours per week.—Professor Roberts.

242. MACHINE DESIGN. (a) Design of power transmission gearing, including belts, ropes, friction, chain and toothed gearing, fits and fitting. (b) Engine details, including cylinders, piston rods, connecting rods, shafts, fly-wheels and machine frames. Required of Mechanical Engineering students. Two hours per week.—Professor Roberts.

Text-book:—Unwin's Machine Design, Parts I and II (Longmans). *Reference book:*—Spooner's Machine Design (Longmans).

243. MACHINE DESIGN. Course same as 242 (a). Two hours per week during the first term. Required of Electrical Engineering students. —Professor Roberts.

244. POWER PLANT DESIGN. The arrangement, design and operation of power plants worked by steam and gas engines; effects of requirements for lighting, heating and power distribution. One lecture hour and one drafting room period per week. Required of students in Mechanical Engineering.—Professor McKergow.

Text-book:—Gebhardt, Steam Power Plant Engineering.

247. Heating and Ventilation of Buildings. Loss of heat from buildings; radiation surfaces; design and operation of heating systems; principles of ventilation; fans and blowers; design and duct systems; temperature and humidity control. One hour per week.—Professor Mc-Kergow.

Text-book :—Allen and Walker, Heating and Ventilating.

249. Mechanical Engineering Laboratory. Experimental investigation of:—engine balancing and vibration; action of governors; performance of fans and blowers; efficiency of hoisting machinery; performance of steam boilers, steam engines, steam turbines, refrigeration machines, condensers, gas engines and producers; efficiency of air compressing and pumping machinery; tests of a complete steam power plant, gas power plant and a heating and ventilating system. Ten hours per week. Required of students in Mechanical Engineering. Prof. McKergow.

Reference book :—Carpenter, Experimental Engineering.

257. Experimental Engineering. Theory of errors; calibration and use of instruments; measurement of power; methods of testing power-plant apparatus and the tabulation of results. Required of students in Mechanical Engineering. One hour per week.

Text book :—Carpenter, Experimental Engineering.

251. Thermodynamics. Efficiency of the piston steam-engine, behaviour of steam in the cylinder, influence of size, speed, rate of expansion, compounding, superheating and steam-jacketing; flow of gases and vapours through orifices and nozzles and applications to the design of steam-turbines; theory and analysis of performance of internal-combustion engines; refrigerating-machine cycles. Required of students in Mechanical Engineering. Two hours per week.—Prof. Roberts.

Text-books :—Ewing's Steam Engine (Cambridge Univ. Press); Moyer, Steam Turbines (Wiley); Marks and Davis, Steam Tables and Diagrams (Longmans).

Books of reference :—Stodola, The Steam Turbine (trans. Lowenstein) (Van Nostrand); Clerk, The Gas Petrol and Oil Engine, Part I.

252. Machine Shop. Experimental work and studies for the minimum time required for production, involving a consideration of the best available machine tool speeds, necessary power of belting, most efficient tool angles, quality of metal and the kind of tool steel used. The course includes work in connection with the lathe, the planer, slotter, shaper, miller and turret lathe; and instruction in gear cutting and cutter grinding. Required of students in Mechanical Engineering. Three hours per week.—Mr. Gatehouse.

253. Manufacturing Plant Design. Methods adopted in designing a plant for manufacture of a specified product; lay-out of shops; construction of buildings; equipment requirements for power, heat and light;

fire protection, general system of operation and cost determination as affecting design of plant. Two lecture hours and one drafting room period per week, second term.—Mr. Coote.

Text-book :—Day, Industrial Plants (Engineering Magazine).

254. WORKS, ORGANIZATION AND ACCOUNTING. Analysis of costs of production and establishment charges; elements of factory accounting; factory record systems; depreciation; organization of staff; functions of departments; purchasing systems; methods of remunerating labour; shop organization and equipment as affecting efficiency of production. Work done as far as possible in connection with course 253. Required of students in Mechanical Engineering. One hour per week.—Mr. Coote.

After the year 1922-23 this course will be superseded by an advanced course in Works Organization and Management in continuation of the work done in course 237.

DEPARTMENT OF METALLURGICAL ENGINEERING.

PROFESSOR :—ALFRED STANSFIELD.
LECTURER :—GORDON SPROULE.
SESSIONAL LECTURER :—HAROLD J. ROAST.
SPECIAL LECTURER :—CHARLES F. PASCOE.
RESARCH FELLOW :—H. L. HUMES.

Third Year.

261. ELEMENTARY METALLURGY AND LABORATORY. An introductory course in general metallurgy, including metals and alloys, fuels, furnaces, refractory materials, pyrometry and calorimetry, and a short account of the metallurgy of copper, lead, iron and steel.

The instruction consists of lectures during the first term and a short laboratory course in which the following exercises will be carried out, as far as time will permit:—(*a*) Roasting a sulphide or arsenical ore on a small scale; (*b*) formation and properties of copper or lead mattes and slags; (*c*) smelting a copper or lead ore in crucibles; (*d*) melting and casting certain metals and alloys; (*e*) the use of the electric furnace; (*f*) leaching a copper or silver ore; (*g*) elementary exercises in some of the following: pyrometry, calorimetry, tests of refractory materials, microscopic examination of metals, heat-treatment of iron or steel, and some simple mechanical testing methods.

Two lectures a week during the first term and one laboratory period during half of the second term.—Dr. Stansfield and Mr. Sproule.

262. ELEMENTARY METALLURGY. The course of lectures as in 261, but without laboratory work, for Chemical Engineering students.

263. FIRE-ASSAYING. The lectures and instruction sheets give an account of the furnaces, balances and other appliances used in assaying;

the sampling and preparation of ores; fluxes and reagents, and the methods used in assaying gold, silver and lead ores, copper and copper ores and mattes, gold and silver bullion and base bullion, cyanide precipitates and solutions.

One lecture a week during the second term for Metallurgical and Mining students.—Mr. Sproule.

264. FIRE-ASSAYING LABORATORY. The students learn as many of the above-mentioned methods as is possible in the time allotted to this course. Care is taken that a student shall be able to make such assays as would be required at a mine, and with a fair degree of accuracy. Students usually have an opportunity of doing additional fire assaying in their Fourth Year.

Two laboratory periods a week during the second term, for Metallurgical and Mining students.—Mr. Sproule.

Reference book :—E. A. Smith, Sampling and Assay of the Precious Metals.

265. METALLURGICAL CALCULATIONS. This is an introductory course on the application of exact chemical and physical laws to metallurgical operations, such as the combustion of fuel, the smelting of ores and the construction and heating of furnaces. One lecture a week during the first term for Metallurgical students.—Dr. Stansfield.

Text-book :—J. W. Richards, Metallurgical Calculations, Vol. I.

267. SUMMER SCHOOL (METALLURGICAL WORKS). Metallurgical students are required to attend the summer school which is held at the end of the Third Year. In this school visits are paid to metallurgical works both in Montreal and at a distance.

In addition to this, excursions may be made by the class from time to time during the term to such metallurgical works as are within reach.

Fourth Year.

271. METALLURGY (GENERAL).

(*a*) The metallurgy of iron and steel.

(*b*) The metallurgy of copper, lead, gold, silver, zinc and nickel.

Two lectures a week during the session and a few laboratory demonstrations.—Dr. Stansfield.

Text-books:—Bradley Stoughton, The Metallurgy of Iron and Steel; W. Gowland, he Mdtallurgy of the Non-ferrous Metals.

272. METALLURGY.

(*a*) General advanced metallurgy.

Text-books :—Fulton, Principles of Metallurgy; Hofman, General Metallurgy.

(*b*) A more detailed account of the metals mentioned in 271.

Reference books :—Hofman, Metallurgy of Copper; Collins, Metallurgy of Lead; Ingalls, Metallurgy of Zinc; Collins, Metallurgy of Silver;

Stoughton, The Metallurgy of Iron and Steel; Forsythe, The Blast Furnace and the Manufacture of Pig Iron.

(*c*) Metallurgical construction and design, and costs of metallurgical plant and operations.

Required of Metallurgical students. Two hours a week during the session.—Dr. Stansfield.

273. FIRE-ASSAYING AND LABORATORY. A short course for Chemical Engineering students. For particulars see 263 and 264. One laboratory period and one lecture in the first term.—Mr. Sproule.

274. METALLURGICAL LABORATORY. One half period in the first term is given to a study of Metallography (see No. 279). Three periods in the second term are devoted to the serious study of some metallurgical problem. Usually two students work together and present a thesis containing an account of an important published work bearing on their subject, as well as the result of their own experimental researches. Required of Metallurgical students.

275. ELECTRO-METALLURGY AND LABORATORY. The course of lectures is devoted mainly to a consideration of the principles and construction of electric furnaces, and their uses for smelting and refining metals. The refining of metals and the recovery of metals from their ores by electrolysis of aqueous solutions is also considered. The laboratory work is arranged to illustrate the lectures. Groups of students operate each of the main types of electric furnace and become familiar with some of the principles of electric furnace construction and design. Two lectures a week and one laboratory period during the second term for Metallurgical students. —Dr. Stansfield.

Text-book:—Stansfield, The Electric Furnace.

276. ELECTRO-METALLURGY. A course of lectures as in 275, and a few laboratory demonstrations for Electrical students.—Dr. Stansfield.

277. METALLURGICAL COLLOQUIUM. One hour a week during the second term is given to informal discussion of research and other work being done in the department, and to other topics of metallurgical interest. —Dr. Stansfield.

278. METALLURGICAL MACHINERY AND DESIGN. Two periods a week, during the second term, are devoted to drafting and designing metallurgical furnaces and plants. The course includes lectures on metallurgical machinery and design, which are included in 272.

279. METALLOGRAPHY AND LABORATORY. A course of lectures and laboratory instruction in the methods of metallography and its use for controlling the heat-treatment of steel and other metals, and for detecting and explaining defects in metallic materials.

One laboratory period during the second term for Chemical Engineering students.—Mr. Roast.

EXTENSION COURSE IN METALLOGRAPHY. Instruction in Metallography is given in the evening by Mr. H. J. Roast and Mr. C. F. Pascoe. For particulars, see Bulletin of Extension Courses.

McGILL UNIVERSITY MINING AND METALLURGICAL SOCIETY.

Students taking the course in Metallurgical Engineering should become members of this Society, which meets at intervals during the session to read and discuss papers by student and graduate members and to hear addresses by practising miners and metallurgists. The Society has been made a students' section of the Canadian Institute of Mining and Metallurgy and its undergraduate members are therefore student members of the Institute and receive all its publications. Papers read before the Students' Society may be entered in competition for all students' prizes offered by the Canadian Institute of Mining and Metallurgy or the Engineering Institute of Canada.

DEPARTMENT OF MINING ENGINEERING.

PROFESSOR :—JOHN BONSALL PORTER.
ASSOCIATE PROFESSOR :—JOHN W. BELL.
LECTURER:—WILLI ERLENBORN.
DAWSON RESEARCH FELLOW :—H. R. BISSELL.
DOUGLAS RESEARCH FELLOW:—T. H. WELDON.
HARRINGTON RESEARCH FELLOW:—M. B. NESBITT.

Third Year.

291. MINING ENGINEERING. *The principles and practice of mining.*—Introductory, simple mining methods, excavation, explosives and blasting, rock drills, coal cutters, gold washing and dredging, hydraulic mining, quarrying, etc. Two lectures per week in the second term. This course is continued in the Fourth Year. (See 297.)—Dr. Porter.

292. ORE DRESSING. *The theory and practice of ore dressing and coal washing.*—The forms in which ores occur and the effect of mixture, impurity, etc.; the theoretical considerations affecting mineral separations; the mechanical operations involved; crushing, sizing and dressing machinery—breakers, stamps, rolls, screens, jigs, vanners, tables, flotation apparatus, washers, magnetic separators, etc. Two lectures per week and laboratory. This course is continued in the Fourth Year. (See 300.)—Dr. Porter.

ORE DRESSING LABORATORY. Simple tests of ores, sands and gravels, by means of pan, classifier, jig, table, etc. One afternoon per week in the second term. Further laboratory work in the Fourth Year. (See 305 and 306.)—Professor Bell and Mr. Erlenborn.

295. CRUSHING MACHINERY. This is the first half of course 292 and is taken by students in Chemical Engineering as well as by Mining and Metallurgical students. Two lectures per week in first term.—Dr. Porter.

293. MINE MAPPING. The calculations and plotting of mine surveys. One afternoon per week in the first term.—Professor Bell.

Text-books :—H. C. Hoover's Principles of Mining, D. W. Brunton's Safety in Tunnelling, and Peele's Mining Engineer's Handbook.

Fourth Year.

297. MINING ENGINEERING. *The principles and practice of mining.*—Prospecting, artesian and oil wells, diamond drilling, open cut mining, shaft sinking, drifting, underground development and methods of mining, timbering, hauling, hoisting, pumping, lighting, ventilating, etc.; mine accidents and their prevention; general arrangement of plant, stores and dwellings; administration; examination and valuation of mines and mine reports. Three lectures a week. Dr. Porter.

298. MINING AND ORE-DRESSING MACHINERY AND DESIGN. *The application of mechanical and electrical engineering to mining, ore-dressing and metallurgy.*—Machinery for haulage, hoisting, pumping, ventilating etc.; mine power plants, power transmission, tramways, cableways, compressors, fans, conveyors, cranes, etc.; mine and mill building, head frames, ore bins, lay-out of plant, etc. Two lectures a week and two drafting room periods in the second term for all students in course. Dr. Porter, Professor Bell and Mr. Erlenborn.

299. MINING AND ORE-DRESSING MACHINERY (ADVANCED). *The application of electrical engineering to mining and ore-dressing.*—This course is supplementary to 298 and is given to students electing to take alternative (a) and therefore omitting course III. Two lectures a week in the first term. Dr. Porter and Mr. Erlenborn.

300. ORE-DRESSING AND MILLING. Continuation of the ore-dressing course of the Third Year. Gold and silver milling, amalgamation, cyaniding, flotation, etc., concentration plants, coal breakers and washers, general conclusions regarding plant design and lay-out. Two lectures a week in the first term. Dr. Porter.

301. MINING COLLOQUIUM. One hour a week is given to the presentation and discussion of papers on the work being done in the department and to other matters relating to mining and ore-dressing. Students are required to take the leading part in these exercises.

305. ORE-DRESSING LABORATORY. Two mornings per week in the first term are given to the ore-dressing and hydraulic laboratories. This time is chiefly assigned to ore-dressing, and certain typical operations are carried out. The exercises in ore-dressing are a continuation of the Third Year laboratory work, but are arranged as far as possible for individuals rather than groups of students. They comprise experiments in crushing,

classifying, jigging, slime treatment, magnetic separation, cyanidation and amalgamation, coal washing, etc.

306. Ore-Dressing Laboratory and Thesis Work. In the second term one whole day and one additional morning per week are given to individual work in the laboratory and to the preparation of a thesis to be filed in the departmental library, and, when suitable, published Students who complete the work in course 305 before the end of the first term, begin their thesis work without delay.

The subjects available for thesis work are very numerous, and range from purely theoretical investigations in crushing, screening, classification, concentration, flotation, etc., to the experimental determination of the best methods for the treatment of particular ores and coals. Numerous different lots of ore are available in sufficient quantities for work on a comparatively large scale. New ores are constantly being secured.

Text-books:—In addition to the text-books already specified for the Third Year, students are required to provide themselves with Hamilton's Manual of Cyanidation. In addition to using these formal text-books, students are required to look up a large number of special references and also make frequent use of the works named below, those marked with a * being so freely used that they should, if possible, be purchased by each member of the class: Hager's Oil Field Practice; Sir C. Le Neve Foster's Ore and Stone Mining; *Donaldson's Practical Shaft Sinking; *Brinsmade's Mining Without Timber; Crane's Ore Mining Methods; *Handbook of Mining Details or the Design of Mine Structures, published by McGraw-Hill Co.; *Ketchum's Design of Mine Structures; *Hughes' Text-book of Coal Mining; Galloway's Lecturers on Mining; Boulton's Coal Mining; *McCulloch and Futers Winding Engines; Behr's Winding Plants for Great Depths; Saunders' Mine Timbering;* Storms' Timbering and Mining; Peele's Compressed Air Plant; *Richard's Textbook of Ore-Dressing; Wiard's Theory and Practice of Ore-Dressing; Rickard's Flotation, Stamp Milling of Gold Ores, Economics of Mining and Sampling and Estimation of Ore in a Mine; Del Mar's Tube Milling and Stamp Milling; *Thompsons' Stamp Milling and Cyaniding; *Julian and Smart's Cyaniding Gold and Silver Ores; *Meagraw's Details of Cyanide Practice; *Hoover's Concentrating Ores by Flotation; *Prochaska's Coal Washing; *Handbook of Milling Details; *Gray's Electrical Engineering; *The Coal and Metal Miners' Pocket-book; Text-book of Rand Metallurgical Practice, Vols. 1 and 2.

Research Fellowships and Advanced Courses.

Special courses of instruction are offered to graduate students in mining and ore-dressing. These courses include lectures, colloquia and individual work in the laboratories and drafting room. There are three

endowed Research Fellowships in the gift of the Mining Department. These are assigned to graduates of the department who show particular aptitude for advanced work.

Laboratories.

The specific laboratory instruction in mining subjects proper begins in the Third Year, with courses in assaying, elementary metallurgy and ore-dressing. In the Fourth Year this work is elaborated, the general method of instruction being first to conduct a limited number of typical operations, and then to assign to each student certain methods which he must study out in detail, and upon which he must experiment and make a written report. In this work he is guided by the professors and fellows, and assisted by the other students, whom he must in turn assist when practicable. In this way every student acquires detailed knowledge of certain typical operations and makes at least one original investigation and at the same time gains a fair general experience of many of the important methods in use.

Illustrations, Museums, Societies, etc.

In addition to the usual projection apparatus and a collection of over two thousand lantern slides, the department has a standard motion picture projector and has made arrangements with the U.S. Bureau of Mines and other sources whereby a large series of Mining films are available for class use. There is also a collection of over 4000 photographs and other illustrations, and a good departmental library, including selected trade catalogues, etc. These collections are constantly being enlarged.

The museums of the building contain suites of ores, concentrates, fuels, and metallurgical materials, models of mines and furnaces, and collections of finished products.

The McGill University Mining and Metallurgical Society and the Mining Society Camera Club meet at stated periods to read and discuss papers by graduate and student members, and occasionally to hear lectures by gentlemen eminent in the profession. The Society has been made a students' section of the Canadian Institute of Mining and Metallurgy and its undergraduate members are therefore student members of the Institute, and receive all its publications. Papers read before the Mining Society or submitted as Summer Essays may be entered in competition for all students' prizes offered by the Canadian Institute of Mining and Metallurgy, or the Engineering Institute of Canada.

Field School in Mining.

294. The summer vacation field class, instituted in 1898, is now a fixed part of the course. All students of Mining in regular course are required to attend this class at the end of the Third Year.

The school lasts from four to five weeks, depending on where it is held. Of this period about one-sixth is given to field work in geology, one-half or more to mining work proper, and the remainder to an examination of ore-dressing and milling plants and metallurgical establishments. The Professor or the Associate Professor of Mining and other members of the staff go with the party and hold daily demonstrations or classes. The students take notes and sketches on the ground, and afterwards are required to work up these notes and to submit a formal report.

During the last twenty years these field parties have visited British Columbia nine times, Nova Scotia six times, Newfoundland and Pennsylvania twice each, and Michigan three times. Numerous visits have also been made to Sudbury, Cobalt and other Ontario localities, while *en route* to more distant points.

The instruction given during this field course is free to all Mining students, the only expense to them being the cost of board, lodging and railway fares. These expenses are kept as low as is practicable and are in part met by the income of a fund provided by the late Sir William Macdonald.

At the close of the regular work of the field school, arrangements are made with the managers of the mines visited and others to give the members of the party individual employment for the remainder of the summer. All students are earnestly advised to engage in such work, and it is probable that it will be made obligatory at an early date in the future.

EPARTMENT OF PHYSICS.

DIRECTOR:—A. S. EVE.
PROFESSOR:—L. V. KING.
ASSOCIATE PROFESSORS:—J. A. GRAY. A. N. SHAW.
ASSISTANT PROFESSORS:—H. E. REILLEY. D. A. KEYS.
DEMONSTRATORS:—V. HENRY. G. H. HENDERSON (absent). R. J. CLARK. E. S. BIELER (absent). L. A. SMITH. L. H. NICHOLS. W. C. QUAYLE. M. CROWE. N. CAM. A. V. DOUGLAS (absent). T. C. THOMPSON. A. MACPHERSON.

The instruction includes a fully illustrated course of experimental lectures on the general principles of physics, embracing in the First Year:—*The Laws of Energy, Heat, Light and Sound;* in the Second Year, *Electricity and Magnetism*, accompanied by courses of practical work in the laboratory, in which the students will perform for themselves experiments, chiefly quantitative, illustrating the subjects treated in the lectures. Opportunity will be given to acquire experience with all the principal instruments used in exact physical and practical measurements.

First Year.

311. HEAT, SOUND AND LIGHT. Two hours per week. Dr. Shaw.
Text-book:—Duncan & Starling's Heat, Light and Sound (Macmillan's.)

312. LABORATORY COURSE. Two hours per week, spent in practical measurements in the Macdonald Physical Laboratory in conjunction with the lecture course. See time-table of sections.
Text-books:—Laboratory Manuscripts, Barnes & Wheeler (Renouf Pub. Co.).

Second Year.

315. ELECTRICITY AND MAGNETISM. Two hours per week. Dr. Gray.

316. LABORATORY COURSE. Two hours per week. (*a*) *Magnetism and Electricity.*—Measurements of pole strength and moment of a magnet; the magnetic field; methods of deflection and oscillation; comparison of moments and determination of the elements of the earth's magnetism.

(*b*) *Current Electricity.*—A complete course of measurements of current strength, resistance, and electromotive force; calibration of galvanometers.

Text-books:—Duncan and Starling, Electricity and Magnetism (Macmillan's); Laboratory Manuscripts (Renouf Publishing Co.).

Fourth Year.

320-321. LABORATORY COURSE. Students of Electrical Engineering will continue their work in the Physical Laboratory in the Fourth Year. The following is a brief outline of the course:—

Magnetic elements and measurements; testing magnetic qualities of iron; theory and practice of absolute measurements; comparison and use of electrical standards of resistance, E. M.F., self and mutual-inducttion, and capacity; testing and calibration of ammeters and voltmeters; insulation and capacity tests; electric light photometry; electrical properties of termionic valves. Two lectures and two laboratory periods per week. Dr. King and Mr. Clark.

Text-book :—Laws' "Electrical Measurements" (McGraw-Hill).

325 to 329. ADVANCED COURSES AND RESEARCH. For advanced courses of lectures, see under honour courses in Arts. There are special facilities offered for those desiring to take up research work in heat, optics, sound, electricity and magnetism, and radioactivity.

For Course in Engineering Physics see page 122.

DEPARTMENT OF SURVEYING AND GEODESY

ASSISTANT PROFESSORS:—A. J. KELLY. JAMES WEIR.

DEMONSTRATOR:—P. G. A. BRAULT.

This course is designed to give the student a theoretical and practical training in the methods of plane and geodetic surveying, in the field work of engineering operations, and in practical astronomy in its application to geodesy. The course is divided as follows:—

Second Year.

346. SURVEYING. Chain and angular surveying; the construction, adjustment, use and limitations of the transit, level, micrometer, compass and minor field and office instruments; railway circular curves; planimeter and pantograph; general topography; levelling; contour surveying; stadia surveying; photographic surveying; land systems of the Dominion and provinces. Mr. Kelly.

347. FIELD WORK. (1) *Chaining:*—(*a*) Length of pace, (*b*) distances by pacing, (*c*) range pole practice, (*d*) distances with surveyors' and engin-

eers' chains, (*e*) angles of a polygon with tape, (*f*) passing an obstacle with chain, (*g*) obstructed distances with chain, (*h*) running in a curve with chain, (*i*) a detail and tie line survey with chain and offset. (2) *Levelling:*—(*a*) Differential levelling, (*b*) contour levelling, (*c*) profile levelling, (*d*) levels for determining quantities of excavation for grading, (*e*) setting grades by the grade rod method, (*f*) shooting-in grades. (3) *Transit Surveying:*—(*a*) Azimuth traversing, (*b*) deflection angle traversing, (*c*) intersection of lines with transit, (*d*) angles of a triangle by repetition. (4) *Compass and Micrometer Surveying*, (*a*) Survey of a farm, using chain and compass, (*b*) traversing with the compass and micrometer, (*c*) retracing a survey with the compass and chain.

348. MAPPING. Drafting from field notes of chain and angular surveys, and the plotting of topographical features. The tinting of maps with water-colours is also included in this course.

Third Year.

351. MAP PROJECTIONS. Graphical determination of spherical triangles; spherical projections, and the construction of maps. Mr. Weir.

352. SURVEYING. Theory and use of instruments; hydrographic surveying; the use of the plane table; mining surveying; barometric and trigonometric levelling; elements of practical astronomy. Mr. Kelly.

353. SURVEYING. Theory and use of instruments; the use of the plane table; mining surveying; magnetic surveying; hydrographic surveying; barometric and trigonometric levelling; theory and setting-out of transition curves; elements of geodetic surveying; elements of practical astronomy. Mr. Weir.

354. FIELD WORK. (1) Level and transit practice, including the adjustments of the instruments; (2) the preliminary, topographic and location surveys for a railway, including simple, compound, transition and vertical curves, profile levelling, cross-sectioning for construction, and plotting of field notes; (3) a topographic survey with the stadia transit and plane table; (4) a hydrographic survey of a river channel, including measurement of discharge; (5) a survey at night illustrating underground methods; (6) astronomical observations with sextant and engineer's transit.

Fourth Year.

359. GEODESY. The determination of time, latitude, longitude and azimuth; figure of the earth, measurements of base lines and triangulation systems; adjustment and reduction of observations. Mr. Weir.

361. FIELD WORK. (1) Determination of latitude, (*a*) by transit and sextant observations of Polaris, (*b*) by zenith telescope, (*c*) by noon observations with transit and sextant. (2) Determination of azimuth, (*a*) by equal altitude, observations of the sun, (*b*) by observations of elongation

of Polaris, (*c*) by observation of a circumpolar star with engineer's transit, (*d*) by means of solar attachments and solar compass. (3) Determination of time (*a*) by equal altitude observations of the sun with sextant and transit, (*b*) by observations of the meridian passage of stars with astronomical transit. (4) Determination of longitude by clock comparisons. (5) Base line measurements. (6) Precision levelling. (7) Measurement of angles by geodetic methods. (8) Plane table surveys.

360. Geodetic Laboratory. The following determinations of the constants and errors of surveying instruments are made in the geodetic laboratory by the Fourth Year students in the Civil Engineering course:— (1) Measurement of magnifying power (2) errors of graduation; (3) measurement of eccentricity of circles; (4) determination of errors of run of theodolite microscopes; (5) investigation of the errors of the graduation of a standard bar; (6) graduating scales with the dividing engine, and comparison thereof on the comparator; (7) investigation of the errors of graduation of circles on the circular comparator; (8) determination of the constants of steel tapes; (9) investigation of the graduation errors of steel tapes on the fifty-foot comparator; (10) determination of the scale value of level vials; (11) investigation of the accuracy of barometers; (12) determination of the collimation error of an astronomical transit by fixed collimators and by nadir method; (13) measurement of inclination error in an astronomical transit by nadir observations.

The determination of gravity by means of the reversible pendulum is experimentally investigated.

Field Equipment.

The equipment of the surveying department comprises the following, apart from the apparatus of the observatory and geodetic laboratory, for which see page 462:—

Fourteen 6-inch transit theodolites with micrometer microscope attachments; forty-seven transit theodolites by various makers with mining, gradienter, stadia, and solar attachments; a photo-theodolite; thirty-three dumpy and fourteen wye levels; two gradient-telemeter levels; hand levels and clinometers; four precision levels; seventeen surveyors' compasses; one miners' dial; prismatic compasses; pocket compasses; twenty-one marine sextants and artificial horizons; box sextants; two reflecting circles; seven plane tables; five current meters; Rochon micrometers; double image micrometers; heliotrope; barometers; one 100-ft. Invar tape; 300-ft. and 500-ft. steel tapes, suitable for base measurements; steel chains and steel bands; linen and metallic tapes; sounding lines; pickets; levelling rods; micrometer targets; station pointer; pantograph, planimeters; slide rules and other minor appliances.

Field Work.

Field work is required of all students entering the Second Year, of students of the Third Year in the courses of Civil and Mining Engineering, and of the Fourth Year in the Civil Engineering course. The work for students entering the Second and Third Years will begin in 1923 on April 30th and will continue for four weeks.

The Fourth Year field class for students in the Civil Engineering course will be held in September, commencing in 1922 on the 5th, and continuing for four weeks.

A special summer course for students entering the Second Year of the Faculty from other universities and from other faculties will be conducted in conjunction with the Fourth Year fieldclass during the month of September, 1922.

Students entering the Third Year, Civil and Mining Engineering courses, from other universities and from other faculties may attend, instead of the regular course in May, a special class in Railway Surveying during the last two weeks in September. This course will begin in 1922, on September 18th. The balance of the field course for these students will be deferred until May, 1923, when they will attend for a period of two weeks the regular survey class held during that month.

All students are required to keep complete field notes, and to prepare maps, sections and estimates for their own surveys. This office work is principally done during the regular summer school session.

Examination for Land Surveyors:—Any graduate in the Faculty of Applied Science in the Department of Civil Engineering and Land Surveying may have his term of apprenticeship shortened to one year for the profession of land surveying.

Text-books and books of reference:—Johnson and Smith's Theory and Practice of Surveying, Greene's Practical and Spherical Astronomy, Hosmer's Practical Astronomy, American Ephemeris and Nautical Almanac, Baker's Engineering Surveying Instruments, Breed and Hosmer's Principles and Practice of Surveying, Turnbull's Underground Surveying, Durham's Mine Surveying, Reports of the Canadian and United States Geodetic Surveys.

REGULATIONS CONCERNING PREREQUISITE SUBJECTS.

REGISTRATION, STANDING AND PROMOTION.

(1) Students proceeding to a degree shall be classed as Undergraduates or Conditioned Undergraduates. Undergraduates are those who having passed all entrance requirements, have also at the close of any session passed the examinations in all the subjects of their course, or who at the opening of the following session have removed all conditions by passing supplemental examinations in the subjects in which they failed. Conditioned Undergraduates are those who have failed to remove their conditions as above.

(2) No student proceeding to a degree shall be allowed to take any subject, unless he has previously passed, or secured exemption in, all prerequisite subjects.*

(3) No Conditioned Undergraduate shall be permitted to take any Second Year subject until he has passed, or secured exemption in, all matriculation requirements, and similarly, no Third or Fourth Year work may be undertaken until all First or Second Year subjects respectively shall have been passed.

The Faculty may, however, waive this rule in special cases on recommendation of the Committee on Registration, Standing and Promotion

(4) Conditioned Undergraduates proceeding to a degree must follow a course of study approved by the Faculty on the recommendation of the Committee on Registration, Standing and Promotion. They may be required to repeat subjects in which they have passed, but in which their standing has been low.

(5) Partial students are those who are not proceeding to a degree. Such students may be admitted to classes without regard to the prerequisite rule, provided that they have obtained the permission of the head of each department concerned, and have also had their courses approved by the Committee on Registration, Standing and Promotion.

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*Prerequisite subjects are those which, in the opinion of the Faculty, must be mastered before the subjects to which they are prerequisite can be intelligently studied.

Concurrent subjects are related subjects which should be studied in the same session.

(6) If a partial student wishes to obtain undergraduate standing in order to proceed to a degree, he shall not be given credit for subjects taken in contravention of the prerequisite rule until he has also passed examinations or secured exemptions in such prerequisites as may be demanded by the Committee on Registration, Standing and Promotion, and, on the recommendation of this Committee, has had his case approved by a unanimous vote of the Faculty.

No student who has failed to remove all his conditions by the beginning of the second term of the Fourth Year shall be permitted to graduate with his class.

List of subjects in the Faculty of Applied Science with the number of subjects which are prerequisite and concurrent.

No.	Year	SUBJECT	Prerequisite	Concurrent
1	II	Arch. Design A	18, 33, 38	6
2	III	" " B	1	7
3	IV	" " C	2	8
4	V	" " D	3	
5	I	Elements of Architecture		
6	II	Elements of Composition		
7	III	Theory of Design	1	
8	IV	Theory of Planning	1	
9	III or IV	Ornament and Decoration	34, 39	
10	III or IV	" " "	34, 39	
11	III or IV	" " "	34, 39	
12	III or IV	" " "	34, 39	
13	I	General History (Arts II)		
14	II	History of Arch. (Classic)		34
15	III or IV	" " (Mediaeval)	13	35
16	III or IV	" " (Renaissance)	13	36
17	V	" " (Modern)	14	
18	I	Architectural Geometry I		
19	II	Arch. Geometry II	18	
22	IV or V	Hygiene of Buildings		
23	IV or V	Heating and Ventilation		
24	II	Building Construction		
25	II	Building Details		24
26	II	Architectural Engineering I		
27	II	Arch. Engineering I (Draughting)		26
28	III or IV	Architectural Engineering II A	26	
29	III or IV	Arch. Eng. II A (Draughting)	26	28
30	III or IV	Architectural Engineering II B	26	
31	III or IV	Arch. Eng. II B (Draughting)	26	30
32	V	Professional Practice	24	
33	I	Architectural Drawing		5
34	II	" "		
35	III	" "		
36	IV	" "		
37	V	Historical Drawing		
38	I	Freehand Drawing		
39	II	" "	38	
40	III	" "	39	
41	IV	" "	40	
42	IV	Modelling		
43	V	"	42	
44	I	Physics (Arts)		
45	I	Physics Lab. (Arts)		
46	II	Architectural Essay		
47	III	" "		
48	IV	" "		
49	V	" "		
50	III, IV, & V	Summer Work		
51	II	General Chemistry	311, 312	52
52	II	Gen. Chem. Lab. (Eng. Students)	311, 312	51
54	III	Inorg. Qual. Anal.—Summer School (Chem., Eng. and Met. Eng. Students)	51, 52	55

No.	Year	SUBJECT	Prerequisite	Concurrent
55	III	Inorg. Qual. Anal. Lab.—Summer School (Chem. Eng. and Met. Eng. Students)	51, 52	54
56	III	Organic Chemistry	51, 52	57
57	III	" " Lab		56
58	III	Physical Chemistry	51, 52	
59	III	Inorg. Qual. Anal	51, 52	60
60	III	" " " Lab		59
61	III	" Quant. "	51	62
62	III	" " " Lab		61
64	IV	Advanced Organ. Chem	56, 57	65
65	IV	Advanced Organic Laboratory	56, 57	64
66	IV	Physical Chem. and Lab	58	
67	IV	Inorg. Lab	61, 62	
68	IV	Industrial Chemistry, Inorganic	61, 62	
69	IV	Industrial Chemistry, Organic	61, 62	
71	IV	Applied Electro-Chem	51, 52	
72	IV	Inorg.Quant. Anal.(Min'g Students)	59, 60	
73	IV	Adv. Inorg. Chemistry	58	
74	IV	Food Chemistry	56, 57	65
75	IV	History of Chemistry	51, 56	
71	IV	Colloid Chemistry	56,57,58,59,60	
82	II	Materials of Construction		
83	III	Sanitary Science		
85	II	Mechanics	194	198
86	III	Highway Engineering		
87	III	Mechanics	83, 198	
88	III	Strength of Materials	83, 198	
89	III	" " " Lab		87
90	III	Foundations and Masonry		87
91	III	Structural Engineering		87
92	IV	Mill Buildings	90	
92	III	Railway Engineering	83,346,347,348	
93a	III	" "	83,346,347,348	
93	III	" "		92
93a	III	" "	83,346,347,348	
94	IV	Theory of Structures	86, 87	
95	IV	Strength of Materials	86, 87	
96	IV	Bridge Design	90	94
96a	IV	" "	90	94
97	III & IV	Hydraulics	83	
98	III & IV	" Lab		97
99	IV	" Machines	86	97
100	IV	Hydraulics and Lab. (Short Course)	83	
101	IV	Municipal Engineering	97, 98	
102	IV	Water Supply & Sewerage	82, 97, 98	
103	IV	Waste Disposal		
104	IV	Civic Administration		
111	III & IV	Elements of Elec. Eng.	198,315,316	
112	III & IV	Elec. Eng. Lab (Elementary)		111
113	III	Electrical Engineering	198	
114	III	Elec. Engineering Lab		113
117	IV	Electrical Engineering	113, 114, 201	320, 321
118	IV	Elec.Eng. Lab.(Elec.Eng. Students)	113	117
120	IV	Elec. Light and Power Distribution		117, 118
121	IV	Electric Traction		117, 118
122	IV	Electrical Designing	232	117, 118

No.	Year	SUBJECT	Prerequisite	Concurrent
123	IV	Applications of Electricity	113	117
124	IV	Elec. Photometry and Illumination	113	117
131	I	English Composition		
132	II	Summer Reading		
133	III	Summer Reading or Essay		
134	IV	Summer Essay		
141	III	Geology, General		
142	III	Mineralogy	51	
143	III	Mineralogy, Determinative	51	
146	IV	Petrography and Lab	141	
147	IV	Petrography (Advanced)	141, 142, 143	
148	IV	Ore Deposits and Economic Geol	141	
149	IV	Geology of Canada	141	
151	IV	Crystallography	142	
152	IV	Geology, Historical	141, 142, 143	
153	IV	Geology Fieldwork (with 294)	141, 142, 143	
171	III	Economics		
172	IV	Engineering Economics	171	
175	IV	Engineering Law		
191	I	Geometry		
192	I	Algebra		
193	I	Trigonometry		
194	I	Mechanics		
197	II	Analytic Geometry		
198	II	Calculus	192	
201	III	Calculus	198	
211	I	Mechanical Drawing		
212	I	Carpentry and Wood Turning		
213	I	Smith Work		
214	I	Foundry Work		
215	I	Shop Methods		
218	II	Mechanics of Machines	191, 192, 194	
220	I	Machine Shop Work		
221	II	Shop Methods		
223	III	Mech. Eng. Lab (Elec. Eng. Students)		226
224	III	Mechanics of Machines	83, 218	
225	III	Machine Design		87, 231 or 232
226	III	Mech. Eng. (General Course)		228
227	III	" " (Mech. Eng. Students)		228
228	III	" " Lab		226, 227
229	III	Thermodynamics	198	
231	III	Mech. Drawing (Mech. Eng. Stud.)		225
232	III	" " (Elec. Eng. Stud.)		225
233	III	Smith Work (Summer School)	213	
234	III	Foundry Work (Summer School)	214	
235	III	Pattern Making	212	
236	III	Machine Shop Work	220	
237	III	Shop Processes and Management		
240	IV	Mechanics of Machines	224	
241	IV	Designing	225, 231	242
242	IV	Mach. Design (Mech. Students)	225	
243	IV	Mach. Design (Elec. Students)	225	
244	IV	Power Plant Design	227	
245	IV	Locomotive Engineering	227	244
246	IV	Marine Engineering	227	244
247	IV	Heat and Ventilation of Buildings	227	244

No.	Year	SUBJECT	Prerequisite	Concurrent
249	IV	Mech. Eng. Lab	227, 228	
251	IV	Thermodynamics	228, 229	
252	IV	Machine Shop Work	236	
253	IV	Manufacturing Plant Design		
254	IV	Works Org. and Accounting	237, 258	252
257	IV	Experimental Engineering	227, 228	249
258	III	Accounting		
261	III	Elem. Metallurgy and Laboratory	51	
262	III	Elem. Metal. (Chem. Eng. Stud.)	51	
263	III	Fire Assaying	51, 52	264
264	III	Fire Assaying Laboratory	51, 52	263
265	III	Metall. Calculations		261
267	IV	Summer School (Metall. Works)		
271	IV	Metallurgy (General)	261	
272	IV	" (Metall. Students)	261	271
273	IV	Fire Assay.& Lab.(Chem.Eng.Stud)	263	
274	IV	Metall. Lab. Thesis	261	271
275	IV	Electro- Metallurgy and Lab	51	
276	IV	" " (Elec. Stud.)		275
277	IV	Metall. Colloquium	261	271
278	IV	Metall. Machinery and Design	261	271
279	IV	Metallography (Chem. Eng. Stud.)		
291	III	Mining Engineering	51	
292	III	Ore Dressing and Laboratory		142, 226
293	III	Mine Mapping	346, 348	
294	III	Mining Field School	141	
295	III	Crushing and Grinding Machinery		226
297	IV	Mining Engineering	226, 291	
298	IV	Mining Machinery and Design	81, 226, 300	297
299	IV	Mining Machinery (Advanced)	315	297
300	IV	Ore Dressing and Milling	292	
301	IV	Mining Colloquium		297, 300
305	IV	Ore Dressing Laboratory	292	300
306	IV	Ore Dressing Lab.(Thesis Work)	264, 305	
311	I	Physics		
312	I	Physical Laboratory		311
315	II	Physics		
316	II	Physical Laboratory		315
320	IV	Physics (Electrical Engineering)	315, 316	
321	IV	Physical Laboratory (Elec. Eng.)		320
341	I	Descriptive Geometry		
342	I	Freehand Drawing		
343	I	Lettering		
345	II	Descriptive Geom. and Perspective	341	
346	II	Surveying	191, 193	
347	II	Surveying Fieldwork		
348	II	Mapping	343	
351	III	Map Projections	345	
352	III	Surveying (Miners)	346, 347	
353	III	Surveying (Civils)	346, 347	
354	III	Surveying Fieldwork	346, 347	
359	IV	Geodesy	353	
360	IV	Geodetic Laboratory		359
361	IV	Geodetic Fieldwork	353, 354	
400	IV	Military Science		

EXAMINATION TIME TABLES

I.—Supplemental Examinations.

Supplemental examinations for all subjects of the First, Second and Third Years Applied Science are held in September. A schedule of these examinations may be obtained from the Dean.

II.—Sessional Examinations.

Note :—The following numbers correspond with the subjects in the prerequisite list and the departmental descriptions. Examinations begin at Nine A.M. and Two P.M., and normally last three hours.

Time Table, First Term Examinations (Subject to Revision).

Date		First Year	Second Year	Third Year	Fourth Year
January 17th.....	A.M.	..	..	11, 82, 261, 351	11, 243, 300, 359
" "	P.M.	..	..	..	70
January 18th	A.M.	..	52	58, 86	67, 120, 149, 273
" "	P.M.	13	..	..	..
January 19th	A.M.	..	197	97, 295, 352	97, 100
" "	P.M.	191	..	..	172
January 20th	A.M.	..	..	59, 61, 92a, 223	22, 68, 71, 124
" "	P.M.	..	..	..	..

SECOND TERM TIME TABLE EXAMINATIONS (Subject to Revision).

DATE		FIRST YEAR	SECOND YEAR	THIRD YEAR	FOURTH YEAR
April 18th	A.M.	..	..	..	
" "	P.M.	341	345	..	
April 19th	A.M.	44	81	61, 201	
" "	P.M.	193	..	90	
April 20th	A.M.	..	51	19, 237, 265	
" "	P.M.	13, 215	6, 52	12, 113, 237, 292, 353	
April 21st	A.M.	..	315	12, 226, 227	
" "	P.M.	5, 311	26	89, 263	
April 22nd	A.M.	..	346	30, 229	
" "	P.M.	..	..	88	
April 24th	A.M.	192	..	16	
" "	P.M.	..	83	87	
April 25th	A.M.	131	24	141	
" "	P.M.	..	198	111, 141	
April 26th	A.M.	194	..	56, 291	
" "	P.M.	..	14	171	
April 27th	A.M.	33	218	85, 92, 224	
" "	P.M.	..	..	223, 228	
April 28th	A.M.	18	19, 221	142, 225	
" "	P.M.	..	..	..	

The Fourth Year Examination in 1923 will commence on May 3rd. The time table will be posted towards the close of the session.

III.—THE LECTURE TIME TABLES.

Complete time tables for all lectures and laboratory work are bulletined in the Engineering Building, and copies may be obtained from the Dean of the Faculty.

FACULTY OF MEDICINE.

The ninety-first session of the Faculty will be opened on October 2nd, 1922. The regular lectures in all subjects will begin on October 3rd, at the hours specified in the time-tables, and will continue until April 30th, 1923.

FOUNDATION AND EARLY HISTORY.

The Faculty of Medicine of McGill University is the direct outcome and continuance of a teaching body known as the Montreal Medical Institution, which was organized as a medical school in the years 1823-24 by Drs. Wm. Robertson, Wm. Caldwell, A. F. Holmes, John Stephenson and H.P. Loedel. These men constitute the first medical staff of the Montreal General Hospital, itself established in 1819. The first session of the Montreal Medical Institution opened in November, 1824, with 25 students, and the lectures were given at the house of the Institution, No. 20 St. James Street, a building situated in the north side of St. James Street, at or near Place d'Armes.

In the year 1829, the Montreal Medical Institution became, by the formal act of the Governors of the Royal Institution for the Advancement of Learning, the Medical Faculty of McGill University. It is thus the oldest Faculty of the University. The first session of the McGill Medical Faculty took place in the winter of 1829-30, and the first university degree, a medical one, was conferred four years later in 1833.

There were no sessions held during the political troubles of 1836 to 1839, and it is owing to this fact that this is the ninety-first instead of the ninety-fourth session of the Faculty, dating from its incorporation with the University in the year 1829.

The work of the Faculty was carried on in the central part of the city until 1872, when a building was provided by the Governors on the University grounds. This building met the demands of the steadily increasing number of students until 1885, when an addition was found to be necessary.

In 1893 and again in 1897, further extensions and alterations were made, funds for the purpose having been provided by generous friends of the Faculty.

On the 16th of April, 1907, a part of these new buildings, together with the original medical building, was destroyed by fire. The wing containing the principal laboratories and lecture rooms was saved, however, and is now a part of the Departments of Physiology and Medical Chemistry.

The erection of a new building was at once begun on a new site, at the corner of Pine Avenue and University Street, and in 1910 the greater part of it was ready for occupation. In 1911 it was wholly available for the work of the Faculty.

MATRICULATION.

All inquiries relating to the examinations for entrance should be addressed to the Registrar of the University.

No student will be permitted to register in the Faculty of Medicine unless he has completely satisfied the matriculation requirements of the University.

For the session 1922-23, the minimum entrance requirements will be Senior Matriculation, as follows:—

Latin or **Greek**, **English**, **Mathematics**, and any three of the following;—**History**, **Latin**, or **Greek** (the one not already taken), **French**, **German**, **Spanish**, **Physics**, or **Chemistry** or **Biology**.

Particulars of the requirements in each subject may be had from the Registrar of the University.

1. Every student, before he can be enregistered as an undergraduate in Medicine, must present a certificate of having passed the Matriculation Examination of the Faculty of Medicine of this Universily, or having passed some provincial, state or university examination accepted by this University.

REQUIREMENTS FOR LICENSE TO PRACTISE.

Intending students are reminded that a University degree in Medicine does not always give a right to practise the profession of medicine. It is necessary to conform with the medical laws of the country or province in which it is proposed to begin practice. Each province in Canada at

present has its special requirements for license, and in most provinces a special standard of general education is insisted upon before beginning the study of Medicine. Students who intend practising in Canada are warned that in certain of the provinces it is necessary to be registered five years before obtaining a license to practise. It follows that entrance qualifications must be registered in the province in which the student intends to practise at the beginning of his course in Medicine.

For the convenience of students, a list of names and addresses of the Registrars of the Medical Councils in the several provinces is here given. Every student should comply with the requirements for registration in one or other of the provinces, before entering on his course in the Faculty of Medicine.

QUEBEC.—Dr. J. Gauvreau, Dandurand Bldg., corner St. Catherine and St. Denis Streets, Montreal.

ONTARIO.—Dr. H. Wilberforce Aikins, 170 University Avenue, Toronto.

NEW BRUNSWICK.—Dr. S. S. Skinner, St. John.

NOVA SCOTIA.—Dr. W. H. Hattie, Halifax.

PRINCE EDWARD ISLAND.—Dr. James Warburton, Charlottetown.

NEWFOUNDLAND.—Dr. H. Rendell, St. John's.

MANITOBA.—Dr. J. E. Coulter, Winnipeg.

ALBERTA.—Cecil Race, M.A., Edmonton.

SASKATCHEWAN.—Dr. G. A. Charlton, Regina.

BRITISH COLUMBIA.—Dr. A. P. Proctor, Vancouver.

DOMINION REGISTRATION.

In order to take the examinations of the Medical Council of Canada a Candidate must have the license of a Canadian province, or he must present a certificate from the Registrar of a Provincial Medical Council that he holds qualifications accepted and approved of by the Medical Council of said province.

Full information may be obtained by writing to the Registrar, Dr. R. W. Powell, 180 Cooper Street, Ottawa, Ontario.

GENERAL COUNCIL OF MEDICAL EDUCATION AND ENREGISTRATION OF GREAT BRITAIN.

The Matriculation Examination in Medicine of this University is accepted by the General Medical Council of Great Britain. Graduates of this University who desire to register in England are exempted from any examination in preliminary education on production of the McGill Matriculation certificate. Certificates of this University for attendance on lectures, practical work and clinics are also accepted by the various

examining boards in Great Britain. To obtain a license from the General Council it is necessary to pass one of the examining boards of Great Britain in both primary and final subjects.

Detailed information may be obtained from one of the three registrars: Henry E. Allen, B.A., 299 Oxford Street, London; James Robertson, 54 George Street, Edinburgh; Richard J. E. Roe, 35 Dowson Street, Dublin.

RECIPROCITY WITH GREAT BRITAIN.

The General Council of Medical Education and Enregistration of Great Britain has entered into reciprocal relations with the Medical Councils of the Provinces of Quebec, Ontario, Nova Scotia, Prince Edward Island, Saskatchewan, Manitoba, British Columbia and New Brunswick. A holder of a degree in Medicine of McGill University who has obtained the license of the Province of Quebec, may register with the Medical Council of Great Britain. He will thus be eligible for competitive examination for the Army, Navy and Civil Service, and will be allowed to practise in Great Britain, South Africa, Australia, India and the West India Islands without further examination.

THE UNDERGRADUATE COURSE

The Undergraduate Course now consists of six sessions of eight months each.

The necessity for a modification of the course has become apparent. Experience has shown that the average student entering medicine is deficient in preliminary training, especially in the scientific branches. In order to meet this defect a standard of matriculation equivalent to two years' academic training will be required.

The work of these two years, which may be taken at any recognized University, will include the first year of the regular B.A. course and one year of Biology, Chemistry and Physics.

Following these two years' preliminary training the Medical Course proper will be reduced to five years, the final year of which will be a purely hospital year and equivalent to giving each student before he graduates a year as hospital interne.

Full details as to the commencement of this new course, together with the curriculum of the two preparatory years, will be published later.

Beginning with the session 1922-23 and until the new course is established the minimum entrance requirements will be Senior Matriculation.

THE SIX YEAR COURSE.

FIRST YEAR.

Biology:—Three hours' lectures and two three-hour laboratory periods throughout the session.

Chemistry:—Three hours' lectures and two three-hour laboratory periods throughout the session.

Physics:—Three hours' lectures and two two-hour laboratory periods throughout the session.

English:—A tutorial class in English expression and a lecture course similar to First Year Arts.

SECOND YEAR.

Anatomy:—Gross Anatomy—Three hundred and thirty hours.

Histology and Embryology:—One hundred and twenty hours.

Physiology:—A course of sixty hours in general physiology and one hundred and eighty-two hours in human physiology.

Chemistry:—Organic Chemistry, fifty hours, and Bio-chemistry, one hundred and twenty hours

THIRD YEAR.

Anatomy:—Including Embryology and Histology, four hundred and eight hours.

Bio-Chemistry:—One hundred and twenty hours.

Physiology:—One hundred and eighty hours.

Bacteriology:—One hundred and five hours.

Pharmacy:—A six weeks' course.

FOURTH YEAR.

Pathology, Pharmacology, Pathological Chemistry, Hygiene, Surgical Applied Anatomy, Clinical Microscopy, Medicine (Clinical), Surgery (Clinical), Psychology.

FOURTH YEAR (FIVE YEARS' COURSE).

Anatomy (Medical and Surgical), Hygiene, Medical Jurisprudence, Pharmacology and Therapeutics, Pathology, Medicine and Clinical Medicine, Surgery and Clinical Surgery, Obstetrics, Gynæcology, Mental Diseases, Ophthalmology, Oto-Laryngology.

In this year two medical and two surgical theatre clinics are given weekly in the Montreal General and Royal Victoria Hospitals. Out-patient clinics are given to groups of students weekly in gynæcology and once weekly in ophthalmology and oto-laryngology. In addition, on four days of the week instruction is given to groups at the bedside, in the laboratories, and in the medical and surgical outpatient departments. The work in hygiene consists of lectures, demonstrations and laboratory work.

FIFTH YEAR (FIVE YEARS' COURSE).

Medicine and Clinical Medicine, Surgery and Clinical Surgery, Obstetrics, Gynæcology, Ophthalmology, Oto-Laryngology, Pathology, Dermatology.

In this year most of the students' time is spent in the hospitals. Theatre clinics are given twice weekly in each hospital in medicine and surgery. There are also daily ward classes to groups of students in these branches. In the out-patient departments of both hospitals clinics are given to groups of students in the various special branches of gynæcology, ophthalmology, oto-laryngology, dermatology, neurology orthopædics, pediatrics and genito-urinary diseases. Clinics, ward classes and demonstrations in obstetrics are given in the Maternity Hospital. Student.

of the fourth and fifth years attend the Alexandra Hospital in groups for instruction in infectious diseases. The clinical instruction in mental diseases is given in the wards of the Protestant Hospital for the Insane at Verdun.

QUALIFICATIONS FOR THE DEGREE.

1. No one will be admitted to the degree of Doctor of Medicine and Master of Surgery who shall not have attended lectures for a period of five eight-month sessions in this University, or some other university, college or school of medicine, approved by this University. Students of other universities, so approved, who may be admitted on production of certificates to a like standing in this University shall be required to pass an examination in primary subjects, and all examinations in the final subjects in the same manner as students of this University.

2. Candidates for final examination shall furnish testimonials of attendance on the following branches of medical education; provided, however, that testimonials equivalent to, though not precisely the same as those stated, may be presented and accepted:—

Biology, General Chemistry, Practical Chemistry, Physics, Histology, Embryology, Anatomy and Practical Anatomy, Physiology and Practical Physiology, Organic Chemistry, Biological Chemistry, Physiological Chemistry, Pharmacy, General Pathology, Bacteriology, Clinical Microscopy, Pharmacology, Therapeutics, Medical Jurisprudence, Hygiene and Public Health, Medical and Surgical Anatomy, Operative Surgery, Special Pathology, Morbid Anatomy, Clinical Chemistry, Principles and Practice of Surgery, Clinical Surgery, Theory and Practice of Medicine, Clinical Medicine, Obstetrics and Diseases of Infants, Gynæcology, Pediatrics, Mental Diseases, Ophthalmology, Oto-Laryngology.

They must also produce certificates of having assisted at six autopsies.

3. No one will be permitted to become a candidate for the degree who shall not have attended at least one full session at this University.

4. Every candidate must give proof of having attended during at least twenty-four months the practice of the Montreal General Hospital or the Royal Victoria Hospital, or some other hospital of not fewer than 100 beds, approved by this University.

5. He must give proof of having acted as clinical clerk for six months in medicine and six months in surgery in the wards of a general hospital recognized by the Faculty, and of having reported at least ten medical and ten surgical cases.

6. He must also give proof of having attended for at least nine months the practice of the Montreal Maternity or other lying-in hospital approved by the University, and of having acted as assistant for at least twenty cases.

7. Every candidate for the degree must, on or before the 30th day of April, present to the Dean of the Medical Faculty testimonials of his

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*It should be understood that the programme and regulations regarding courses of study and examination contained in this calendar hold good for this calendar year only.

qualifications, entitling him to an examination, and must at the same time deliver an affirmation or affidavit that he has attained the age of twenty-one years.

8. The examination to be undergone by the candidate shall be in the subjects mentioned on pages 268 and 269.

9. The following oath or affirmation will be exacted from the candidate before receiving his degree:—

Ego, A—— B——, Doctoratus in Arte Medica titulo jam donandus, Sancto coram Deo cordium scrutatore, spondeo:—me in omnibus grati animi officiis erga hanc Universitatem ad extremum vitæ halitum salutem persevaturum; tum porro artem medicam caute, caste et probe exercitaturum et, quod in me est, omnia ad ægrotorum corporum salutem conducentia cum fide procuraturum quæ denique inter medendum visa vel audita silere conveniat, non sine gravi causa vulgaturum. Ita præsens mihi spondenti adsit Numen.

EXAMINATIONS

Frequent oral examinations are held to test the progress of the student, and occasional written examinations are given throughout the session.

Class examinations are held during the session in each of the first year subjects, the marks obtained being added to the total marks obtained at the final examinations.

Any student of the first year whose work at the end of the first term is judged to have been unsatisfactory may be asked to leave the University

If the standing obtained by any student in the class examinations is not satisfactory, he shall not be permitted to take the final examinations.

A minimum of 50 per cent. in each subject is required to pass and 75 per cent. for honour.

The work of one session must be completed and all examinations passed before a student is permitted to advance to the next.

Students who fail at the regular examinations in not more than three subjects of the first or second year and in not more than two subjects in the third and fourth years, may, at the discretion of the Faculty, be allowed to take the supplementary examinations before the beginning of the following session. These examinations will be held during the week preceding the regular opening of the session.

Students who fail to pass in a subject in which practical work is required may, at the discretion of the examiner, be required to repeat the course and furnish a certificate of attendance thereon.

Students who fail in one subject only of the final year may, at the discretion of the Faculty, be allowed a supplemental examination in that subject. Should the subject be one in which practical or clinical work is required, the student must furnish a certificate of additional hospital attendance or laboratory work before presenting himself for examination.

Students who fail at the examination held at the end of the first term may, at the discretion of the examiners, be granted supplemental examinations at a period not less than three months after the regular examinations.

A student who, after being registered in the first, second, third, or fourth year for three successive sessions, fails to qualify for advancment, or who, after being registered in the final year for three successive sessons, fails to qualify for the degree, shall not be permitted to register again as a student of Medicine in the University.

Applications for supplemental examinations must be in the hands of the Registrar at least three days before the day set for the beginning of the examination, and they must be accompanied by a fee of $5.00 for each subject.

MICROSCOPES.

Each student is required to provide himself, on beginning his studies, with a first-class Microscope for laboratory and private study throughout his course. The Faculty will supply the instruments necessary for demonstrations, etc. The microscope must be of substantial construction and be provided, as a minimum, with the following accessories:—$^2/_3$, $^1/_6$ and $^1/_{12}$ oil immersion objectives, and a substage condenser. Such an instrument will last a lifetime and is an essential part of the equipment of a practitioner in medicine.

Should the student not be provided with such a microscope, he may purchase a new guaranteed instrument through the Bursar's office of the University for the sum of $125.00, as long as the supply lasts.

DOUBLE COURSES.

B.A., M.D.

The degrees of B.A. and M.D. may be obtained in eight years, of which the first two shall be taken in the Faculty of Arts, and the remaining six in the Faculty of Medicine. The course in Arts is as follows:—

First Year:—**English 1 and 2, History 1, Mathematics 1 or 2, Latin 1 or Greek 1 or 2. Any two additional languages.**

Second Year:—**Any five of the following:—**

Economics and Political Science 1 or 2, History 2, English 3 and 4, French 2, German 5, Hebrew 1, Latin 2 or Greek 2 or 4, Philosophy 1 or 2, Mathematics 3.

In the double course for the degrees of B.A., M.D., the degrees of B.A. will be conferred on the completion of the above curriculum in Arts and of the second year in Medicine.

B.Sc, M.D.

This course in the physical and biological science is specially devised for students who might wish to proceed to a degree in Medicine or to advanced work in physiology, biological chemistry, pharmacology or allied subjects. Students intending to enter the Faculty of Medicine must pass the matriculation examination in Latin before admission to the third year of the B.Sc. course.

Graduates in this course are qualified to enter the third year in the Faculty of Medicine.

First Year.

English 1 and 2, German 1, Mathematics 1.
Physics 1, Chemistry 1, French 2.

Second Year.

German *or* **French, Physics 2, Botany 1.**
Zoology 1. Chemistry 3.

Third Year.

Chemistry 2 and 4, **General Physiology** (Second Year Medicine)
Zoology 5, Ethnology 2, Physics 3. Botany 5.
Histology and Embryology (Second Year Medicine).

Fourth Year.

Chemistry 7, Chemistry 10, Anatomy (Second Year Medicine).
Physiology (Second Year Medicine).

COURSES OF LECTURES.

BIOLOGY.

The course in Biology for Medical students is conducted, conjointly, by the University Departments of Botany and Zoology. It consists of three parts:—

Part I. (The Microscope).

PROFESSOR OF BOTANY:—FRANCIS E. LLOYD
LECTURER IN BIOLOGY:—GEORGE W. SCARTH.

This part of the course deals with the rationale and simple technique of microscopic vision, including both light and dark field illumination. Twelve lectures and twelve laboratory periods (three of each per week during the first month of the session).

Part II. (Zoology).

PROFESSOR OF ZOOLOGY:—ARTHUR WILLEY.
ASSISTANT PROFESSOR:—J. STAFFORD.
LECTURER:—M. NOTKIN.

The course in elementary zoology is that part of the premedical curriculum which introduces the student to some of the terms and principles of animal biology. The manner in which the leading functions of the body are performed in a number of selected types is explained, thereby preparing the mind for the reception of the more advanced instruction in human anatomy and physiology.

Text-books:—Wells and Davies.

Part III. (General Biology).

PROFESSOR:—FRANCIS E. LLOYD.
LECTURER:—GEORGE W. SCARTH.

This part of the course is a continuation of Part I. It consists of laboratory training in elementary general biology, dealing more especially with those aspects of the field best illustrated by plants; and of lectures based upon the laboratory experience.

Lectures, three per week, and laboratory periods, two (each of three hours) per week, from the close of Part II of the course to the end of the session.

GENERAL AND ORGANIC CHEMISTRY.

PROFESSOR:—R. F. RUTTAN.
ASSOCIATE PROFESSOR:—N. N. EVANS.
ASSISTANT PROFESSOR:—W. H. HATCHER.
DEMONSTRATORS:—D. M. MORRISSON. D. K. CHARLTON. A. CAMBRON. G. W. HOLDEN.

Instruction in General and Organic Chemistry for students in Medicine is given during a portion of each of the first two years.

First Year: During the first year the principles governing chemical action are studied in a systematic laboratory course. A printed synopsis of the work of each day is provided and necessary explanations given before beginning the work. The course includes a study of chemical phenomeda; the preparation and properties of typical elements and compoounds the laws of chemical action; gravimetric and volumetric determinations, and a short course in qualitative analysis. The student is required to pay special attention to the keeping of an accurate record of his observations and calculations.

Note-books for this purpose are provided and are examined and criticized by the demonstrators. Test examinations are held during the session

During this year a course of experimental lectures in General Chemistry is given; three per week, with frequent reviews and examinations. This course is designed to familiarize the student with the characteristics of chemical action and the conditions which modify it, rather than a detailed study of the preparation and properties of the elements and their compounds. The course includes the elements of physical chemistry and simple calculations. The application of chemistry to medicine is made especially prominent. An examination in general chemistry is held at the end of the session.

Second Year: A short introductory course of three lectures per week in organic chemistry is given during the first term. This forms a preparatory course leading up to the more complete study of organic substances of biological importance during the second term in the course on biological chemistry.

Students will find it greatly to their advantage to have a practical knowledge of elementary chemistry before entering upon the study of Medicine. Graduates in Arts of recognized universities, on presenting certificates of having taken courses in theoretical and practical chemistry, and of having passed examinations in the same, may be exempted from the chemistry of the first year.

Text-Books:—General Chemistry—General Chemistry for Colleges new edition), Alex. Smith; Organic Chemistry, Remsen.

BIOCHEMISTRY AND PATHOLOGICAL CHEMISTRY

PROFESSOR:—A. B. MACALLUM.

ASSISTANT PROFESSOR:—George ERIC SIMPSON.

DEMONSTRATOR AND JOHN MCCRAE SCHOLAR:—J. F. LOGAN.

ASSISTANT DEMONSTRATORS:—I. M. RABINOVITCH, H. E. EBERTS.

The instruction in Biochemistry for those students in Medicine of the present six years' course who have already taken the courses in Biochemistry of the second year will include an advanced course of lectures—three a week—and laboratory exercises, six hours per week, during the first term of the third year.

This course will deal with (a) the origin, character, and the active properties of the various ferments of the digestive tract, (b) the chemical and physical processes involved in, and the products resulting from the digestion, absorption and assimilation of the foodstuffs in the human body, (c) the intermediate and ultimate products of metabolism, and (d) the chemistry of the tissues and of blood, bile and urine.

In the laboratory course the exercises will deal with the practical side of the subjects treated in the lecture course, such as the digestion of starch, fats and proteins, the absorption and assimilation of fats, the metabolism of the carbohydrates absorbed, and of the products of protein digestion. Especial attention will be given to the methods of the qualitative determination of the more important metabolites, such as urea, uric acid, creatine, creatinine, etc.

In addition to the written and practical examination exacted of each student in this course, oral examinations will be held and the results thus obtained will, with those from the written and practical tests, serve to determine the standing of the student in the class list in Biochemistry for the year.

A course of two lectures and four hours of laboratory exercise per week on Pathological Chemistry will be given in the second (winter) term to students of the six years' curriculum. This will cover the metabolism of febrile conditions, deficiency diseases, diabetes mellitus, nephritis, hepatic disorders, etc. The laboratory work will include the more exact methods of the determination of the constituents of the blood and urine in health and disease. This course must be taken by all candidates for the Sutherland Medal.

For the students of the six years' curriculum, after 1922-23, and eventually for the students of the seven years' curriculum, the course of instruction in Biochemistry will include three lectures and six hours of laboratory exercises per week throughout the third year. This will include all the instruction hitherto, and till then to be, given in the second term of the

year and in the first term of the third year of the present six years' curriculum. There will follow in the fourth year an extended lecture and laboratory course in Pathological Chemistry to be taken by all the students in that year. A full announcement of all the courses will be published later.

Text-books:—Halliburton, Essentials of Chemical Physiology; Plimmer, Practical Organic and Bio-Chemistry; Hawk, Practical Physiological Chemistry; Cole. Practical Physiological Chemistry.

Reference:—Robertson. Principles of Biochemistry; Von Furth, Chemistry of Metabolism; Bayliss, Principles of General Physiology.

PHYSICS.

PROFESSOR OF PHYSICS:—A. S. EVE.

ASSISTANT PROFESSORS: H. E. REILLEY. D. A. KEYS.

DEMONSTRATORS:— VIOLET HENRY. R. J. CLARK. R. A. SMITH. L. H. NICHOLS.

First Year: This course is given in the Physics Building of the University. It consists of four lectures and two laboratory periods of two hours per week throughout the session.

The lectures are experimental in character, especially designed to meet the requirements of students in Medicine. The course includes a study of energy, simple machines, properties of matter, fluid pressures, fluid motion, capillary phenomena; production, transmission and interpretation of sound; temperature and temperature measurements, gas laws and kinetic theory, heat capacity, latent heats, laws of vaporization, humidity measurements, heat conduction; elements of magnetism, laws of electrostatics, electrostatic induction and condensers; primary batteries, Ohm's law and its applications, measurements of resistance and electromotive force, measuring instruments, magnetic effects of current, induced currents, induction coil, conduction through gases, properties of cathode rays and X-rays; radioactive substances and their radiations; laws of reflection and refraction of light, mirrors, lenses and combinations, microscopes, telescopes, spectra, spectrum analysis, colour interference, crystallography, polarized light and saccharimetry.

In the laboratory the student learns the use of such instruments as the balance, vernier, spherometer, hydrometer, hygrometer, spectroscope, saccharimeter, electroscope. Verifications are made of Archimedes' principle, Boyle's law, laws of reflection and refraction, Ohm's law, etc. Measurements are taken of specific gravities, frequencies,

specific heats, latent heats, electrical resistances, focal lengths, besides qualitative experiments illustrating the more important physical principles.

Students entering McGill University in all faculties receive lectures and do laborarory experiments in Physics, hence a good knowledge of arithmetic, algebra and geometry is required.

A knowledge of the elements of trigonometry, logarithms, mechanics and physics enables a student to make a good beginning on entry, which stands him in good stead for the remainder of his college career.

Text-books:—Duff's Text-book of Physics,—Blakiston's.

ENGLISH

The course in English will be conducted in the Faculty of Arts and will over the following:

ENGLISH 1: **English Composition**; Class discussions of words, sentences, paragraphs, whole compositions, including the various types of English prose, narration, description, exposition and arguments. The object of this course is to train students to write English with correctness, clearness and facility. Constant practice in writing is required, The class is divided into sections of not more than forty. On the last lecture hour of each month the sections are brought together for a general discussion and review. Individual conferences or tutorial meetings while the instructor, or an assistant, are required at least every fortnight.

ENGLISH 2: **English Literature**: Two hours a week and a third hour at the pleasure of the department. The object of this course is to give the student a general background knowledge of English literature from Chaucer to the present time. A large amount of illustrative reading is prescribed. Individual conferences or tutorial meetings with an assistant are required at least every fortnight; these conferences include discuussions and examination questions on the readings and lectures.

ANATOMY.

THE ROBERT REFORD PROFESSOR:—S. E. WAITNALL.
ASSOCIATE PLOFESSOR OF HISTOLOGY BND EMBRYOLOGY:—J. C. SIMPSON.
LECTURER IN HISTOLOGY:—W. M. FISK.
LECTURER IN EMBRYOLOGY:—F. SLATER JACKSON.
LECTURER IN ANATOMY:—I. MACLAREN THOMPSON.
LECTURER IN CHARGE OF DENTAL STUDENTS:—H. E. MACDERMOT.
SENIOR DEMONSTRATOR (in Charge of Dissecting Room):—
A. D. CAMPBELL.
DEMONSTRATOR IN HISTOLOGY AND EMBRYOLOGY:—IVAN PATRICK.
DEMONSTRATORS:

F. J. TEES.	J. G. W. JOHNSON.
L. H. MCKIM.	A. ROSS
H. BRUCE MALCOLM.	L. L. REFORD.
G. A. FLEET.	F. N. K. FALLS.

PROSECTOR:—MR. WILLIAM MUIR.

Under the six-year curriculum the student begins the study of anatomy in the second year of his course, and continues it in the third, fourth and fifth years. During the second and third years the whole body is dissected twice. The aim of this part of the course is to establish the essential foundations upon which the practice of medicine and surgery is based; the importance of the application to the living body of the knowledge gained in dissection is, therefore, emphasized throughout. During the fourth and fifth years the subject is considered from the standpoint of its clinical bearing. Close co-operation between the anatomical, histological and embryological parts of the course is maintained during the whole four years.

Second Year.

1. **Elementary Anatomy**:—The student dissects the whole body, including the brain, aiming at a general knowledge of the form and relations of the systems and organs without detailed consideration. Stress is laid upon the importance of function in determining form and structure, and the osteology and surface anatomy are studied concurrently.

Text-books:—Gray's "Anatomy" (English edition); Walmsley's. "Practical Anatomy." Whole session, 330 hours.

2. **General Embryology**:—A course of lectures and practical work on the general problems of development and on the early stages of development of the human embryo.

Reference books:—Kellicott, "Text-book of General Embryology"; Prentiss and Arey, "Text-book of Embryology."

First Term, 60 hours.

3. **General Histology**:—A detailed study of the fundamental tissues of the human body.

Text-book:—Jordan, "Text-book of Histology."

Second term, 60 hours.

Third Year.

4. **Advanced Anatomy**:—The whole body is dissected for the second time and in detail. In this year regional and cross-section anatomy receive special attention and, in correlation with courses 5 and 6, the nervous system and sense organs are further studied.

Text-book:—Gray's "Anatomy" (English edition).

Whole session, 360 hours.

5. **Special Histology**:—This course runs parallel with the course in gross anatomy, the microscopic structure of the organs and systems being studied at the time they are dissected.

Text-books:—Jordan, "Text-book of Histology."

Whole session, 90 hours.

6. **Organogenesis**:—The development of the organs and systems of the human body, co-ordinating with courses 4 and 5.

Text-book:—Prentiss and Arey, "Text-book of Embryology."

Whole session, 30 hours.

Reference:—"Reference Handbook of Medical Sciences," new edition, 1922.

Fourth Year.

7. **Surgically Applied Anatomy**:—This course is given in January and February, immediately preceding the course in Operative Surgery on the cadaver, which is conducted in the dissecting room by the Department of Surgery. Second trimester, 30 hours.

Fifth Year.

8. **Medically Applied Anatomy**:—An optional course of eight lecture periods. Second trimester, 8 hours.

Collateral Reading:—The following books are recommended for collateral reading by students in the department:—

Ranson, "Anatomy of the Nervous System" (3rd year).
Keith, "Human Embryology and Morphology "(3rd year).
Treves and Keith, "Surgical Applied Anatomy," *or*
Davis, "Applied Anatomy" (4th year).
Hilton, "Rest and Pain" (3rd or 4th year).
Whitnall, "The Human Orbit."

Dictionary:—Every student is advised to provide himself with a good medical dictionary as an essential part of his text-book equipment. Any one of the following may be recommended:—Stedman, Dorland, Gould, Lippincott's, American.

Alternative Text-books :—Although the text-books mentioned in connection with the courses are recommended, any of the following may be used:—

Anatomy :—Cunningham, "Text-book of Anatomy"; Morris, "Human Anatomy"; Piersol, "Human Anatomy"; Quain, "Elements of Anatomy." *Practical Anatomy :*—Parsons and Wright, "Practical Anatomy"; Heisler, "Practical Anatomy"; Cunningham, "Manual of Practical Anatomy." *Anatomical Atlases :*—Sabotta and McMurrich; Toldt; Spalteholz. *Embryology and Histology :*—Schäfer, "Essentials of Histology"; Piersol, "Normal Histology"; Bailey, "Text-book of Histology"; Lewis and Stöhr, "Text-book of Histology"; Bailey and Miller, "Text-book of Embryology"; McMurrich, "The Development of the Human Body."

Post-Graduate Study.

Material and preparations for post-graduate study are always available, and a special effort will be made to assist graduates in the investigation of any part of the subject in which they are interested.

Physical Anthropology.

The Department is prepared to give a course of special instruction in the methods and application of this subject.

Dental Anatomy.

Details of the courses in anatomy and histology for dental undergraduates and graduates will be found in the Calendar of the Dental Faculty.

GENERAL PHYSIOLOGY.

PROFESSOR:—FRANCIS E. LLOYD.
LECTURER:—GEO. W. SCARTH.

On the structure, properties and behaviour of protoplasm. Sixty hours during the first semester, for the students of the second year.

Reference Books :—Verworn, General Physiology (translation by Lee); Bayliss, Principles of General Physiology; Bechhold, Colloids in Biology and Medicine (translation by Bullowa); McClendon, Physical Chemistry of Vital Phenomena.

PHYSIOLOGY.

THE JOSEPH MORLEY DRAKE PROFESSOR:—JOHN TAIT.

LECTURERS:—F. GREEN. L. NOTKIN. N. GIBLIN.

ASSISTANTS:—G. J. CASSIDY. S. W. BRITTON.

DEMONSTRATOR:—JOHN ARMOUR.

The purpose of this course is to make the student thoroughly acquainted, so far as time permits, with modern physiology, both from a scientific and practical standpoint—its methods, its deductions, and the basis on which the latter rest.

1. Medical Physiology.

The course comprises demonstrations and laboratory work.

Lectures.—These extend over two years and are illustrated by diagrams and lantern demonstrations.

Laboratory Work.—(a) Juniors. Second year students work for the most part in pairs for one period of three hours per week throughout the year. The course comprises experiments on blood, on connective and epithelial tissue, on muscle, nerve, heart, blood-vessels and central nervous systems. Frog material is largely used for the latter part of this course.

Class-book:—Schafer's "Experimental Physiology."

(b) Seniors. Third year students, working in pairs or in larger groups, attend for one period of three hours per week throughout the year. The course includes mammalian operative work as well as observations on the human subject with clinical and other apparatus.

Class-book:—Sherrington's "Mammalian Physiology."

Demonstrations.—Special demonstrations are given from time to time on such subjects as cannot be dealt with by individual groups of the practical class, and also on whatever research work is being carried out in the Department.

2. Optional Course.

For students of proved ability an optional course covering higher work will be given during the session.

3. **Special Advanced Courses.**

(a) Advanced Lectures and Laboratory.—Prof. Tait and Staff.
(b) Hæmatology.—Drs Green and Notkin.
(c) Nervous System.—Mr. Britton.
(d) Relation between Structure and Function.—Prof. Tait.

Research Work: For particulars relating to post-graduate work in Physiology, and for courses leading to the degrees of M.Sc. and D.Sc., application should be made to the professor.

Text-books :—Starling, Howell, Stewart,

Reference :—Leathes, Starling (Lectures), Cannon, Hill (Recent Advances and Further Advances); Sherrington, Bayliss, MacLead.

Library: Members of the Students' Physiological Society have the privilege of consulting and borrowing books of the library of the Society.

PATHOLOGY AND BACTERIOLOGY.

STRATHCONA PROFESSOR:—HORST OERTEL.
ASSOCIATE PROFESSOR OF PATHOLOGY:—L. J. RHEA.
ASSOCIATE PROFESSOR OF PARASITOLOGY:—J. L. TODD.
ASSISTANT PROFESSOR OF BACTERIOLOGY:—A. A. BRUÈRE.
LECTURERS:—M. E. ABBOTT. C. T. CROWDY.
SENIOR DEMONSTRATORS:—J. W. SCOTT. W. W. BEATTIE.
DEMONSTRATORS:—KEITH HUTCHISON. L. C. READ.
ASSISTANT DEMONSTRATORS:—J. M. KINSMAN. J. H. B. GRANT. W. DE M. SCRIVER.
DOUGLAS FELLOW IN PATHOLOGY:—T. R. WAUGH.

Pathology.

1. General pathology and pathological anatomy, including infection and immunity: lectures and experimental demonstrations twice weekly throughout the session. Professor Oertel.

2. Laboratory course in general pathological anatomy and histology, two hours twice weekly, winter term. Professor Oertel, Demonstrators and Assistant Demonstrators.

3. Special pathology and pathological anatomy: lectures on the diseases of the more important systems and organs, followed by demonstrations, two hours once weekly, throughout the session. Includes the circulatory, hæmatopoietic, respiratory, digestive and renal systems. Professor Oertel and Demonstrators.

4. Applied Pathology: Demonstration and discussion of anatomical and bacteriological material in relation to clinical medicine. Professor Rhea.

5. Demonstrations upon fresh autopsy material, once weekly. Professor Rhea, Dr. Crowdy and Dr. Scott.

6. Performance of autopsies. Professor Oertel, Professor Rhea, Dr. Crowdy, Dr. Scott and Demonstrators.

7. Clinical pathological conferences at the Royal Victoria and Montreal General Hospitals, once weekly. Clinical and Pathological Staffs.

8. Selected chapters of special pathology with demonstrations; includes the nervous system, bones, joints, glands of internal secretion. Dr. Abbott and Dr. Crowdy.

9. Pathological research (open to graduates) by appointment. Professor Oertel and Professor Rhea.

Reference books :—Oertel, General Pathology; Virchow, Cellular Pathology; Cohnheim, Lectures on Pathology; Zeigler, Specielle Pathologie; Delafield and Prudden, Text-book of Pathology; Wells, Chemical Pathology; Adami and McCrae, Pathology.

Bacteriology.

1. Laboratory course in bacteriology, with explanatory lectures and demonstrations, autumn term. Professor Bruère, Demonstrators and Assistant Demonstrators.

2. Bacteriological and immunological research (open to graduates). Professor Oertel and Professor Bruère, by appointment.

Reference books :—His and Zinsser, Muir and Ritchie; Jordan; McFarland; Mallory and Wright.

Parasitology.

PROFESSOR JOHN L. TODD.

The main feature of this course is a series of twenty lectures and demonstrations, illustrated by lantern slides, and by specimens both gross and microscopical. Demonstrations of special methods used in the study of animal parasites are given in the laboratory.

Text-books :—Manson, Tropical Diseases (London, 7th Edition 1921); Stitt, Practical Bacteriology, Blood Work and Animal Parasitology (Philadelphia, 6th Edition with Clinical Notes, 1921); Chalmers and Castellani, Manual of Tropical Medicine (London, 3rd Edition, 1919).

Works of reference :—Byam, The Practice of Medicine in the Tropics (London, 1921).

PHARMACOLOGY.

PROFESSOR:—H. G. BARBOUR.
ASSISTANT PROFESSOR:—R. L. STEHLE.
LECTURER IN CLINICAL PHARMACOLOGY:—D. S. LEWIS.
LECTURERS:—J. L. D. MASON. WESLEY BOURNE.
DEMONSTRATORS:—M. D. MOYSE. E. LOZINSKY. V. O. SUTHERLAND.

3rd Year.

Materia medica and Pharmacy: Demonstrations by the Professor of Pharmacy.

4th Year.

Chemistry of drugs and poisons: Laboratory course with supplementary lectures and demonstrations. Chemistry of alkaloids, glucosides and special drugs. Assistant Professor Stehle and Assistants.

Pharmacology: Laboratory course correlated with systematic lectures, demonstrations and conferences, Action of drugs and poisons upon normal and abnormal organisms. Includes: general principles (absorption,excretion,mode of action, tolerance,hypersensitivity, synergism, antagonism and relation of chemical structure to action;) etiotropic action (antiseptics and specific chemotherapy); organotropic action (effects of drugs upon nervous, digestive, circulatory systems, etc., individual organs and internal metabolic processes). Professor Barbour, Assistant Professor Stehle, Drs. Mason, Bourne, Lewis and Moyse.

5th Year:

Clinical Pharmacology: Systematic lecture course on principles of therapeutics and the applications of drugs in internal medicine, surgery gynæcology and the specialties. Drs. Lewis and Bourne.

6th Year:

Practical Clinical Pharmacology: In co-operation with the Department of Medicine. Ward classes and clinics in both the Montreal General and the Royal Victoria Hospitals. Dr. Lewis and Dr.....

Anesthesia: Practical instruction in Anesthesia is given by Dr. Hepburn at the Montreal General and Dr. Howell at the Royal Victoria Hospitals.

Physical Therapy: Practical instruction by Dr. Harvey and by Dr. Norman Brown in the out-patient departments of the Montreal General and the Royal Victoria Hospitals.

Research: The department is located on the fifth floor of the new Biological Building and is especially equipped for investigation. Suitably prepared persons may undertake research at any time throughout the year.

Higher Degrees: Advanced courses leading to the degrees of M.Sc., Ph.D. or B.Sc.Med. are arranged to suit individual cases.

Text-books:—Cushny, "Useful Drugs".

Reference:—Sollman, Edmunds & Cushny, Bastedo, Jackson, McGuigan, B.P., U.S.P., "New and Nonofficial Remedies."

HYGIENE.

STRATHCONA PROFESSOR:—T. A. STARKEY.
LECTURERS:—R. ST. J. MACDONALD. F. B. JONES.

The instruction in hygiene given to the medical undergraduates has been carefully designed to meet the requirements of the practitioner in medicine. It relates chiefly to the investigation of the causes of disease, the channels of transmission and the adoption of modern preventive measures—all problems which are likely to confront the medical man daily in the prosecution of his duties.

The practical part includes a number of visits to various places of hygienic importance. The student is thereby brought in close contact with the various conditions which he is liable to meet during his later career.

The Museum is fully equipped and contains full-sized working models and apparatus illustrative of the application of all hygiene principles. See description of Museum, pages 303 and 304.

In addition to the above, lantern demonstrations of the various topics which have been previously discussed in the lectures are frequently given.

An optional practical course more advanced than the one above referred to is open to students wishing to go into greater detail.

The laboratory is provided with all apparatus needed in every branch of public health work. Advanced students are furnished with separate quarters and with every facility for the prosecution of research work.

See pages 299 and 300 for advanced courses in Hygiene.

Text-Books:—Parkes and Kenwood; Notter and Firth; Harrington and Richardson; Roseneau, Park.

MEDICAL JURISPRUDENCE.

PROFESSOR:—D. D. MACTAGGART.

In this course the criminal and civil aspects of legal medicine are taken up and fully discussed, also lunacy and its medico-legal aspects, Special attention is devoted to the subject of blood stains, the chemical microscopic and spectroscopic tests for which are fully described and demonstrated, also the serum test for the detection of human blood. The modes of action of poisons, general evidence of poisoning and classification of poisons are first treated of, after which the more common poisons are described, with reference to symptoms, post-mortem appearance and

chemical tests. The post-mortem appearances are fully illustrated by specimens. Injuries are fully discussed, with reference to their significance, under the Workmen's Compensation Act and Accident Insurance.

Text-books:—Glaister; Buchanan; Mann. *Reference:*—Peterson and Haines; Taylor.

MEDICINE AND CLINICAL MEDICINE.

PROFESSORS:—F. G. FINLEY. C. F. MARTIN.

ASSOCIATE PROFESSOR:—W. F. HAMILTON.

ASSISTANT PROFESSOR:—A. H. GORDON.

LECTURERS:—C. A. PETERS, H. B. CUSHING, A. A. ROBERTSON, J. KAUFMANN, E. H. MASON, D. S. LEWIS, C. F. WYLDE, C. F. MOFFATT,

DEMONSTRATORS:—J. G. BROWNE, D. W. MCKECHNIE, R. H. M. HARDISTY, D. G. CAMPBELL, A. H. MACCORDICK, E. E. ROBBINS, C. C. BIRCHARD, J. L. D. MASON, D. MACCALLUM, C. R. BOURNE, I. RABINOVITCH, E. V. MURPHY, A. T. HENDERSON.

ASSISTANT DEMONSTRATORS:—D. L. MENDEL. F. R. BROWN. C. R. JOYCE. J. J. WALKER. J. C. WICKHAM.

The object of this course is to impart a sound knowledge of the principles of general medicine in the diagnosis and treatment of disease; to afford a knowledge of the technique, and, above all, so to train the student that he will be enabled to cultivate the faculty of critical judgment. The mere instruction, of itself, is regarded as but a part of the course, while the personal contact of students and patients throughout the final years, is of prime importance.

Every facility is afforded for this purpose, and students are required to report upon ten patients, placed under their direct care, to a conclusion.

In connection with the laboratory and ward work, minor problems are from time to time presented in order to encourage students in research. This will be further stimulated through closer correlation with the pre-clinical years.

Fourth Year (Six Years Course):—The student is taught the methods of clinical medicine by means of demonstrations to the class as a whole, as well as by direct practical work in groups. Students will, from time to time, be allowed the privileges of the wards and the outdoor department for this purpose, and will thus be brought in contact with patients early

in their career. This course will last throughout most of the session. In the winter term of this year a course of ten lectures on the general principles of Medicine will be given.

Fourth Year (Five Years Course):—The instruction in this year will consist of two theatre clinics a week, and work in the wards. Students will be made responsible for the reporting and observation of patients in the wards, and will be expected to demonstrate these cases to the groups who are receiving instruction. A laboratory period of instruction will be given each week in connection with the clinical work, and the tests already learned in the pre-clinical and pre-medical years, will now be applied in practice. Students in this year will also be required to attend the outdoor department.

Fifth Year:—This year is devoted entirely to hospital work, each student acting in the capacity of assistant resident. The number of lectures will be minimal. The student will be made directly responsible for reports on the patients in the wards, for the diaries of the cases, and will be required to make special examinations in company with the Chief in whatever department this is required. He will also attend the outdoor under supervision, and will further be expected to assist at all autopsies concerned with his patients, and will be required to prepare the material for the clinical pathological conference which is held once weekly. Clinics are likewise given on diseases of children, upon neurological cases, infectious diseases, and radiography in the departments concerned.

Text-books:—Osler's Practice; Ander's Practice; Rainey and Hutchison; Flint's Auscultation and Percussion; Hewlett's Clinical Pathology; DaCosta, Handbook of Medical Treatment, Forcheimer's Medical Treatment; Butler's Diagnosis; Martinet's Diagnostic Methods.

Reference:—Albutt's System; Osler and McCrae; Oxford Loose Leaf; Nelson's Loose Leaf; Barker's Monographic Medicine; Lippincott's Quick Reference Book; Wood's Reference Handbook of Medical Sciences; Tilney and Riley, Diseases of the Nervous System; Lippincott's New Medical Dictionary: Cattell.

Applied Immunology. Dr. Fraser B. Gurd and Associates.

The purpose of this course is to co-ordinate the work in Pathology and Bacteriology (as given in the third year) with the clinical manifestations of diseases due to bacteria, to demonstrate the means at the disposal of the body for the prevention and cure of infection, and the clinical procedures, including the employment of vaccines and sera, which are of value in prophylaxis and treatment.

Fourth Year (Autumn Term):—A course of didactic lectures (with demonstrations).

Fifth Year:—A course of six clinical demonstrations to groups.

Clinical Microscopy.

This course, which is given during the winter term of the third year, is essentially a practical one given in the Pathological Laboratory under the department of Clinical Medicine. The classes are held twice weekly, each demonstration lasting two hours.

Students are given instruction in the microscopic appearance of various excretions and secretions of the body; films are prepared from urinary sediments, blood, pus, sputum, fæces and gastric contents; as also of fluids obtained by puncture. Complete instruction is given in examination of the blood, on the use of instruments and differential staining methods; pathogenic bacteria and the commoner animal parasites of the body and skin are also shown. Finally specimens of microscopic interest which appear in Hospital from time to time.

Department of Neurology.

CLINICAL PROFESSOR:—C. K. RUSSEL.
LECTURER:—F. H. MACKAY.
DEMONSTRATOR:—N. VINER.

A course on Applied Anatomy of the nervous system is given in the earlier years of study.

Lectures and clinical demonstrations on neurology are given in the fourth and fifth years of the course in the wards and theatre.

In the fifth year groups of students are taken into the wards and outdoor departments of the General Hospitals. The Psychiatric Clinic at the Royal Victoria Hospital deals, moreover, with patients sent for investigation from the charitable agencies of the city and co-operates with the work of the Canadian National Committee for Mental Hygiene.

A series of demonstrations on neuro-pathology is given in the laboratory.

Department of Psychiatry.

PROFESSOR:—T. J. W. BURGESS.
PROFESSOR OF PSYCHOLOGY:—WILLIAM D. TAIT.
LECTURERS:—C. A. PORTEOUS. G. MUNDIE.
DEMONSTRATORS:—H. A. SIMS. A. G. MORPHY.

Psychology.

A short course of lectures is given on General and Abnormal Psychology, with special reference to the latter. Discussion will include the psychological principles underlying Psychotherapy, relation of abnormal to normal mental life, mental hygiene, mental deficiency, intelligence tests and some reference to the Psychology of Insanity.

Psychiatry.

The course in psychiatry comprises a series of lectures at the University, with demonstrations at the Protestant Hospital for the Insane, Verdun, and at the General Hospitals. Clinical instruction is given to groups of senior students, who are required to examine a number of cases, making written reports thereon, followed by discussion.

In the outdoor departments of the hospitals where a psychiatric clinic is held once a week, the students are taught the various methods of testing psychopathic cases, and making detailed diagnoses.

Text-books:—"Outlines of Psychiatry," White; "Clinical Psychiatry," Kraeplin; "Clinical Psychiatry," Diefendorf; "Psychiatric Neurological Examination Methods," Wimmes Hoisholt.

Department of Pediatrics

LECTURER:—F. M. FRY.

DEMONSTRATORS:—C. F. WYLDE. W. E. ENRIGHT. L. LINDSAY.

ASSISTANT DEMONSTRATORS:—H. P. WRIGHT. A. GOLDBLOOM. A. B. CHANDLER.

A didactic course on the diseases of infancy and childhood, including the feeding of infants, is given during the session to students of the fourth year. Clinical and didactic lectures are given on diseases of the new-born at the Montreal Maternity Hospital. In the Montreal General and Royal Victoria Hospitals weekly clinical lectures and ward demonstrations on diseases of childhood will be given to students of the fifth year, and groups of students in rotation will be assigned work in connection with the out-patient children's departments of both hospitals. The new Foundling and Baby Hospital, which has recently been opened, with a capacity of 100 beds, will be utilized during the session for a series of demonstrations in infant feeding.

A voluntary course is given during the summer months, at the Children's Memorial Hospital, to a selected number of students who have successfully passed their Fourth Year.

Text-books:—Holt; Rachford; Koplik; Ruhrah; Chapin and Koplik; Dennett.

Department of Dermatology.

LECTURERS:—{W. P. BURNETT.
G. G. CAMPBELL.

The course is entirely clinical, consisting of a weekly theatre clinic, at the Montreal General Hospital, on specially selected cases, and out-door clinics, weekly, by Drs. G. G. Campbell, at the Montreal General Hospital, and W. P. Burnett, at the Royal Victoria Hospital, throughout the session. Lantern slides are made use of to illustrate the course; also a large series of coloured plates and photographs.

Text-books:—Stellwagon, Walker's Introduction to Dermatology, Hartzell, Campbell, Shamberg, Sequira, Sutton.

History of Medicine.

PROFESSOR:—SIR ANDREW MACPHAIL.

A course of twelve lectures will be given upon the history of medicine to inform undergraduates in the Faculty upon the progress of the science. It is the intention to examine the causes which produced the varying conceptions of medicine in times past, rather than burden the student with a narration of facts and a recital of biographies.

SURGERY AND CLINICAL SURGERY.

PROFESSORS:—GEORGE E. ARMSTRONG.
J. ALEX. HUTCHISON.

ASSISTANT PROFESSORS:—A. E. GARROW, E. W. ARCHIBALD, A. T. BAZIN, E. M. EBERTS.

LECTURERS.—W. L. BARLOW, C. B. KEENAN, F. A. C. SCRIMGER, F. J. TEES.

LECTURERS IN ANÆSTHESIA.—W. B. HOWELL, W. G. HEPBURN.

DEMONSTRATORS:—A. R. PENNOYER, C. K. P. HENRY, F. McKENTY, F. B. GURD, E. C. LEVINE, GUY JOHNSTON.

DEMONSTRATOR OF ANÆSTHESIA:—J. W. ARMSTRONG.

ASSISTANT DEMONSTRATORS:—W. H. SMYTH, ALBERT ROSS, L. H. MCKIM.

To obtain greater uniformity and a better perspective, the department of Surgery and Clinical Surgery has been placed under one head who has been given control of the teaching in the wards and out-patient departments of the two large hospitals.

Montreal, situated at the head of ocean navigation, and itself a large railroad and industrial centre, is noted for the large amount and varied character of its clinical material. Indeed, the teaching in surgery is largely clinical and practical. In the Montreal General and Royal Victoria Hospitals there are between five and six hundred beds and also large out-patient departments.

During the fourth year (Six Years' Course) students are instructed in the out-patient department. They are brought in immediate contact with the patient, and taught how to make an examination, how to get a correct history, how to differentiate the abnormal from the normal, how to apply their anatomy, to dress wounds, arrange and apply splints, and to reduce the simpler fractures and dislocations. This is a valuable training, as the conditions met in an out-patient department are similar to those that form a considerable part of a practitioner's work.

In the winter term of this year a course of ten lectures on the general principles of Surgery will be given.

In their fourth year (Five Years' Course) students attend surgical clinics in the amphitheatre of the hospitals three days in the week. They also attend in the wards of the hospitals in groups. Cases are assigned to them and they are required to examine them carefully, record the conditions found, arrive at a tentative diagnosis, and outline the treatment indicated. A teacher of mature experience and of professorial rank teaches them in the wards and instructs them in groups.

The fifth is the purely hospital year. There are three amphitheatre clinics in the hospitals, weekly. Group teaching is carried out in the wards. The patients are assigned to the students in rotation and they are expected to make very careful and thorough examinations in the wards, do their own laboratory work under the direction of a supervisor and to study the natural history prognosis and methods of treatment.

They are to be present when their cases are operated on and to prepare themselves with all the care and detail of the operating surgeon. Opportunities of assisting are afforded, and also of seeing closely the conditions that are found to obtain.

Students in this year are required to do a good deal of collateral reading and to make themselves familiar with the anatomy, pathology and physiology of the injury or disease and the region implicated.

Every encouragement is given to originality and independence of opinion.

Didactic lectures and laboratory demonstrations on anæsthesia are given in the College by the Department of Pharmacology and Therapeutics and practical instruction in the administration of anæsthetics is given in the hospital to students of the fourth and fifth years.

Text-books:—Operative Surgery,—Binnie and Burghard; Surgery: A System of Surgery, C. C. Choyce; Rose and Carless, Thomson and Miles, Keen's Surgery; Russell Howard; Ashurst; Da Costa; Emergency Surgery,—Sluss; Surgical Anatomy,—Treves and Keith; Davis' Applied Anatomy. Gask and Williams' Text-book of Surgery, Fitzwilliam's Pocket Surgery.

DEPARTMENT OF UROLOGY.

CLINICAL PROFESSORS:—F. S. PATCH. D. W. MACKENZIE.

DEMONSTRATORS:—R. E. POWELL. M. SENG.

Students attend this department in the Royal Victoria and Montreal General Hospitals for instruction in the methods of diagnosis and treatment of Surgical diseases of the urinary and male genital organs and syphilis.

During the fourth year they receive a course of fifteen lectures on the elements of the subject in the University followed by fifteen clinics demonstrating typical cases in the Hospitals.

During the fifth year they receive clinical instruction on groups of cases presented for differential diagnosis and students are required to discuss these cases and outline the treatment indicated.

Clinical clerkships are assigned in the urological wards, where cases are followed to a conclusion. Opportunity is here afforded for the complete study of a considerable number of cases.

Text-book :—"Urology."

Collateral Reading :—Thompson Walker's Genito-Urinary Surgery; White and Martin's Genito-Urinary Surgery and Venereal Diseases.

DEPARTMENT OF ORTHOPAEDIC SURGERY.

CLINICAL PROFESSORS:—A. MACKENZIE FORBES. W. G. TURNER.

DEMONSTRATORS:—J. A. NUTTER. W. J. PATTERSON.

Instruction in diseases and injuries of the bones, joints, muscles and the surgery of deformities, both congenital and acquired, is given to the students of the Fifth Year in groups of ten to twelve in the Children's Memorial Hospital, the Royal Victoria and the Montreal General Hospitals.

Each student attends clinics in Orthopædic Surgery at each of these hospitals for four or five consecutive weeks.

The demonstrations given are essentially practiical. Every student is expected to write histories of, to make the diagnoses in, and to prescribe the treatment for a definite number of patients.

In the Montreal General and the Royal Victoria Hospitals there are large clinics for both adults and children suffering from orthopædic affections.

In the Children's Memorial Hospital there is a great wealth of clinical material consisting of children who are suffering from the surgical diseases of infancy and childhood.

Text-books :—Whitman's Orthopedic Surgery, Albee, Fraser on Tuberculosis of Bones and Joints of Children, and Tubby and Jones on Surgery of Paralysis; Jones, Orthopedic Surgery of Injuries.

OBSTETRICS.

PROFESSOR OF OBSTETRICS AND GYNÆCOLOGY:—W. W. CHIPMAN.

ASSISTANT PROFESSOR:—H. M. LITTLE.

LECTURERS:—J. R. GOODALL. H. C. BURGESS. J. W. DUNCAN. J. R. FRASER.

DEMONSTRATOR:—W. A. G. BAULD.

This course will embrace : (1) Lectures on the principles and practice of the obstetric art, illustrated by diagrams, fresh and preserved specimens, the artificial pelvis, complete sets of models illustrating the deformities of the pelvis, wax preparations, bronze mechanical pelvis, etc.; (2) bedside

instruction in the Montreal Maternity, including external palpation pelvimetry, the management and after-treatment of cases: (3) a complete course on obstetric operations with the Tarnier-Budin phantom; (4) the diseases of infancy; (5) a course of individual clinical instruction at the Montreal Maternity Hospital.

The course is carefully graded and instruction will be given separately to students of the fourth and fifth years.

Particular attention is given to clinical instruction, and a clinical examination similar to that held in medicine and surgery forms an important part of the final examination.

A few lectures will be given on diseases of the new-born, supplemented by clinical demonstration and ward work. The lecturers and demonstrators will give special courses from time to time in the college and in the hospitals, and will take the students in groups for the purpose of demonstration, examination and review.

In the fourth year will be given the regular course of didactic lectures.

The fifth year will be devoted mainly to practical and clinical work in the wards of the Montreal Maternity and in its externe service. Palpation on the living subject, theatre clinics, ward clinics, and individual instruction in the management of labour and the care of the puerperal patients will be the chief features of the course.

Text-books:—Whitridge Williams, Webster, Jewett, Evans, De Lee, Berry Hart.

GYNAECOLOGY.

PROFESSOR OF OBSTETRICS AND GYNAECOLOGY.—W. W. CHIPMAN.

CLINICAL PROFESSOR OF GYNAECOLOGY.—F. A. L. LOCKHART.

LECTURERS:—DAVID PATRICK.
H. M. LITTLE
H. C. BURGESS.
J. R. FRASER.

DEMONSTRATOR:—W. A. G. BAULD.

The didactic course consists of about twenty-five lectures given twice weekly during the autumn session. The anatomy and physiology of the organs and parts concerned are first discussed. Then the various methods of examination are fully described, the necessary instruments exhibited, and their uses explained. The lectures are illustrated as fully as possible by drawings, morbid specimens and lantern slides.

Clinical teaching, including out-patient and bedside instruction, is given at both the Royal Victoria and Montreal General Hospitals by Professors Chipman and Lockhart, assisted by Drs. Patrick, Little and Burgess. A large amount of clinical material is thus available for practical instruction in this department of medicine. Numerous operations are done before the class and made the subjects of remarks. In addition

to the ward-patients, each hospital conducts a large out-patient gynaecological clinic, to which advanced students are admitted in rotation, and instructed in digital and bi-manual examinations and in the use of instruments for diagnosis.

Particular attention is thus given to clinical instruction, and a clinical examination in gynaecology, similar to that held in medicine and surgery, forms part of the final examination.

Text-books :—Hart and Barbour; Blair Bell; Dudley Hurst; Gilliam.

OPHTHALMOLOGY.

PROFESSOR:—J. W. STIRLING.

CLINICAL PROFESSORS:— W. G. M. BYERS. G. H. MATHEWSON.

LECTURERS:— F. T. TOOKE. S. H. McKEE.

DEMONSTRATORS:— A. G. McAULEY. J. A. MacMILLAN.

ASSISTANT DEMONSTRATORS:— J. ROSENBAUM. A. BRAMLEY-MOORE.

In the fifth year there is a didactic course of about ten lectures delivered at the University. The more unusual diseases of the eye are fully described, while the commoner diseases are merely touched on, the fuller consideration of the latter being reserved for the clinical lectures to be delivered in the final year. In addition, in the fourth year there is instruction in the anatomy of the eye, the methods of examination, and the use of the ophthalmoscope and the elements of refraction.

In the fifth year there is a regular bi-weekly course of clinical lectures at the Royal Victoria and Montreal General Hospitals.

The operative work in eye surgery is fully open to undergraduates on the day set apart for the purpose.

Text-books :—Parsons; May; De Schweinitz; Fuchs.

OTO-LARYNGOLOGY.

PROFESSOR:—H. S. BIRKETT.

LECTURER:—H. D. HAMILTON.

DEMONSTRATORS:— HAMILTON WHITE. J. T. ROGERS.

ASSISTANT DEMONSTRATORS:— D. H. BALLON. R. P. WRIGHT. G. E. HODGE.

The course of instruction in Oto-Laryngology is carried on in the recently constructed wards and out-patient department of both the Montreal General and the Royal Victoria Hospitals, where owing to the large clinics the students are afforded ample opportunity of receiving practical instruction in these subjects. Between these two hospitals there are about fifty beds set apart for this specialty.

The course is carried on only in the final year, and during the session the courses are conducted in small classes, so that personal supervision, which is so essential in this specialty, is accorded to each student.

The clinics are held twice a week in each hospital and continue throughout the session.

The course is based altogether upon the needs of such knowledge as a general practitioner should have regarding these special organs. The student is instructed in the methods of examining the nose, throat and ear; of applying the various tests of hearing; and shown only such cases as he is likely to meet in general practice. The course is completed by a review of lectures upon the more common diseases of nose and throat.

The anatomy of the parts concerned is studied in the student's third year, and reviewed from the surgical aspect in the fourth year. A series of dissected preparations is available for post-graduate study in the department of anatomy upon application.

From eight to ten didactic lectures are given only upon the more common conditions met with in these organs in general practice.

At the end of the course an examination is held, which is written and clinical.

Two positions as Resident House-Surgeons in the Department of Oto-Laryngology in both hospitals are open to the members of the graduating class.

Text-books:—Albert Gray; St. Clair Thompson; Porter; H. Tilley Kerrison; Phillips.

GRADUATE AND ADVANCED COURSES.

Commodious laboratories for advanced work have been equipped in connection with the Pathological and Clinical Departments of both the Royal Victoria and Montreal General Hospitals, and also in connection with the college laboratories for physiology, chemistry, pathology and pharmacology.

Recent graduates of recognized universities desiring to qualify for examinations by advanced laboratory courses, or who wish to engage in special research, may enter at any time by giving notice, stating the course desired and the time at their disposal.

All the regular clinics and demonstrations of both hospitals will be open to such students on the same conditions as to undergraduates in Medicine of this University.

Further details regarding courses, fees, etc., may be obtained on application to the Assistant Dean of the Medical Faculty.

1. HYGIENE AND PUBLIC HEALTH.

Candidates undertaking this course must have possessed a degree in medicine, or other qualifications for practice, for at least twelve months before they are competent to receive the diploma. The courses prescribed are as follows:—

1. A course of lectures dealing in a comprehensive manner with the General Principles of Hygiene, Preventive Medicine and Sanitation.

2. Bacteriology—a full practical course in General Bacteriology, special attention being given to Pathogenic organisms and Parasites; general principles of Bacteriological Analysis, especially in relation to Public Health matters.

3. Sanitary Chemistry:—(a) Examination of air and air vitiated by respiration, products of combustion, factory and other trade conditions; water and water supplies in general, detection of poisons associated with water supplies; all the common kinds of foods and bevarages; sewage and sewage effluents; articles of dress, house decorations, etc.; chemical investigations connected with certain trades and occupations.

(b) Physics:—Principles of statics, pneumatics, hydraulics, light and photometry, heat and thermometry and the principles of hygrometry, only in their application to hygiene.

4. An extended course of practical out-door Sanitary work under a Medical Officer of Health, or other Authority affording facilities for such instruction.

5. Sanitary Legislation:—Statutes and by-laws relating to public health; the powers of public Sanitary authorities.

6. Vital Statistics:—Calculation and tabulation of returns of births, marriages, deaths and diseases.

7. Meteorology and climatology, including the geographical and topographical distribution of diseases.

Candidates for this Diploma may claim exemption from attendance in any of the subjects outlined in the scheme of studies on presentation of proof that they have received already equivalent instruction in such subjects.

Except in special instances where exemptions may have been granted, the length of the course is eight months—from the beginning of October to the end of May.

The examination for the Diploma includes the following subjcts:—Examination of clinical cases at an infectious hospital; the drawing up of outlines for annual and other reports of officers of health; a report upon the sanitary conditions of some actual locality; demonstration of the consideration and use of meteorological, hygienic and sanitary apparatus; microscopical examination of specimens submitted; description of specimens of human and other diseased tissues; the inspection of carcasses of animals to be used for food. Chemical and Bacteriological examinations, the scope of which is indicated in the paragraphs relating to instruction on these headings.

The above examination is written, oral and practical and extends over a period of four or five days.

The fee for the course and the Diploma is $100.00.

2. COURSE FOR CIVIL ENGINEERS.

This course is given to meet the requirements of engineers, particularly those making a specialty of sanitary engineering. The object of the instruction is to elucidate the public health principles involved in engineering problems, *e.g.*, ventilation, water supplies, sewage disposal, and drainage systems.

3. COURSE FOR ARCHITECTS.

Special instruction is given in those branches of public health relating to architectural work, *e.g.*, lighting and heating, ventilation, sanitary fixtures, draining and plumbing.

4. COURSE FOR THE DEGREE OF DOCTOR OF PHILOSOPHY.

Hygiene, or some particular branch of it, may be taken out as a minor subject in the final examination for the Ph.D. degree. Special arrangements are made to suit the student in order that the work done in this department shall be a supplement to his major subject taken out in Applied Science.

CLINICAL INSTRUCTION.

In the fourth year (six years' course), instruction is given to groups in the methods of physical diagnosis and in minor surgery.

During the fourth year (five years' course), three medical and three surgical theatre clinics are given weekly in the Montreal General and Royal Victoria Hospitals. In addition, on four days of the week instruction is given to groups at the bedside, in the laboratories, and in the medical and surgical out-patient departments. Out-patient clinics are given to groups of students once weekly on ophthalmology and oto-laryngology during the last trimeter.

In the Alexandra Hospital for Contagious Diseases, students of the fourth and fifth years receive bedside instruction in groups.

The fifth year is devoted almost exclusively to clinical work. There are three clinics weekly in medicine, three in surgery, two in obstetrics and two in gynæcology, these being supplemented by group teaching in the wards and by instruction in the clinical laboratories. In addition, groups receive instruction in ophthalmology, oto-laryngology, pediatrics, dermatology, gynæoclogy, neurology and genito-urinary surgery in the out-patient department of both hospitals. At the Montreal Maternity four ward classes weekly in obstetrics are given.

CLINICAL CLERKS in the medical and surgical wards of both hospitals are appointed every three months, and each one during his term of service conducts, under the immediate direction of the Clinical Professors, the reporting of all cases in the ward allotted to him. Students are required to show a certificate of having acted for six months as clinical clerk in medicine and six months in surgery, and are required to have reported at least ten cases in medicine and ten in surgery. The instruction obtained as clinical clerk is found to be of the greatest possible advantage to students, as affording a true *practical* training for his future professional life.

DRESSERS are also appointed to the out-door departments. For these appointments, application is to be made to the assistant surgeons, or to the resident surgeon in charge of the out-door department.

The large number of patients affected with diseases of the eye and of the ear, nose and throat, now attending the special clinics at both hospitals, afford ample opportunity to students to become familiar with all the ordinary affections of those organs, and to make themselves proficient in the use of the various instruments used in examining them, and it is hoped that every student will thus seek to gain a practical knowledge of these important branches in medicine and surgery. Operations are performed on the eye and on the ear and nose and throat after the out-door patients have been seen, and students are invited to attend the same, and as far as practicable to keep such cases under observation so long as they remain in the hospital.

There are also special departments in both hospitals for gynæcology, pediatrics, neurology, orthopædics, dermatology and genito-urinary diseases, directed by specialists in these branches. Students are thus enabled to acquire technical knowledge under skilled direction. The plan of teaching practical gynæcology, which has met with marked success, has been the limitation of the number of students attending each clinic to three.

Clinical instruction is given in the wards of the Protestant Hospital for the Insane at Verdun.

The clinical teaching in infectious diseases is given in the wards of the Alexandra Hospital for Contagious Diseases.

HOSPITALS.

The City of Montreal is celebrated for the number and importance of its public charities. Among these its public hospitals are the most prominent and widely known. Those in which medical students of McGill University receive clinical instruction are: (1) The Montreal General Hospital; (2) The Royal Victoria Hospital; (3) The Montreal Maternity Hospital; (4) The Alexandra Hospital for Contagious Diseases; (5) The Protestant Hospital for the Insane; (6) The Children's Memorial Hospital; (7) Montreal Foundling and Baby Hospital.

MUSEUMS.

The Faculty has during recent years devoted special attention to the development of its museums in the several departments in which objective teaching is of special value in the education of the student.

Through the benefaction of the late Lord Strathcona, a splendid new Museum has been erected which is undoubtedly the finest structure of its kind in America. The Museum projects from the north-western side of the new Medical Building, of which it forms a central feature, and faces the Royal Victoria Hospital. It is in the form of a rectangular cross and is in three stories, of which the upper contains the anatomical collections, while the two lower floors are devoted to the Museum of Pathology.

MUSEUM OF PATHOLOGY.

DIRECTOR:—PROFESSOR HORST OERTEL.
CURATOR:—MAUDE E. ABBOTT.
ASSISTANT CURATOR:—W. W. BEATTIE.
OSTEOLOGIST AND PREPARATOR:—MR. E. L. JUDAH.

The Pathological Museum of the University contains to date (May 1st, 1922) approximately 7,440 specimens, of which some 3,540 are mounted and catalogued on the Museum shelves, and the balance are in a carefully labelled and classified storage, where they are readily available fo

teaching, and from which they are constantly being drawn and added to the display collection on the shelves of the Museum proper. A descriptive catalogue is in process of preparation, the first volume of which has already been published by the Oxford Press. Other parts are available and are being made ready for print through the help of the Osler Catalogue and the James Cooper Funds. The Museum includes the pathological collection of the Royal Victoria Hospital, which consists of some 240 specimens preserved in colours, mounted and catalogued. A collection of some 200 mounted specimens is also available for teaching purposse in the Museum of the Pathological Department of the Montreal General Hospital. Some 110 models, as well as an extensive set of microscopic slides and charts for pathological and clinical teaching, are filed both in the Museum and in the Pathological Departments of the Royal Victoria and the Montreal General Hospitals.

Museum of Anatomy.

DIRECTOR:—PROF. S. E. WHITNALL.

The Anatomical Museum is designed primarily as a teaching museum to be used in conjunction with the didactic and practical instruction given in the Department of Anatomy. It now contains several thousand preparations and models arranged to illustrate general embryology; human embryology and organogensis; the theory of human evolution; the prehistoric races of mankind; physical anthropology; comparative osteology; general comparative anatomy and the details of human structure, regional, systematic and topographical.

In addition to the material which is exhibited in the museum cases several hundred wet preparations are kept in storage and are used as teaching specimens in the class and dissecting rooms.

Special collections illustrating the anatomy of regions and organs have been formed and are being continually augmented. These are available not only for undergraduate teaching, but also for use by interested graduates.

A collection of over two thousand lantern slides and several hundred stereoscopic photographs is maintained.

The original Anatomical Museum of the College was completely destroyed by the fire of 1907.

Museum of Hygiene.

DIRECTOR:—PROF. T. A. STARKEY.

The material in the museum has been rearranged with a view to exhibiting not only specimens of the best and most approved types of appliances in each particular branch of public health, but also examples of types which are to be avoided on hygienic principles.

In order to facilitate study and reference, the specimens have been classified upon a decimal system under the following sections:—

1. *Disinfection.*—Including disinfecting apparatus of all kinds, disinfectants and antiseptics.

2. *Lighting and Heating.*—Showing contrivances used for these purposes, and illustrative of the principles involved.

3. *Water.*—Showing conditions connected with pollution of water supplies, whether derived from the surface or underground sources; methods of purification on large and small scales; water pipes, etc., and the influence which these fittings may exert upon the water contained therein.

4. *Soils and Buildings.*—Building sites, various kinds of soils; relation between soil and dampness; permeability of soils to gases and water; composition of soils; effects of ground moisture on dwellings; measures to be taken against dampness and foul air; and building materials of all kinds.

5. *Air.*—Including ventilation schemes and appliances; climate and meteorology, with apparatus illustrative of each class.

6. *Foodstuffs.*—Adulterations and sophistications practised; samples of unsound foodstuffs.

7. *Bacteriological and Pathological.*—Specimens of diseased meats; specimens and slides of all the common micro-organisms, pathogenic and non-pathogenic.

8. *Clothing.*—Specimens of all the materials utilized for the manufacture of clothing, showing the raw state and the various processes through which they pass until the finished product is reached; the hygienic value of these various articles is also set forth.

Injuries and deformities which may directly result from the use of badly designed articles of clothing; history and evolution of clothing.

9. *Drainage and Refuse Disposal.*—This section includes every type of appliance used as sanitary fixtures in buildings; drainage schemes; ultimate disposal of refuse both liquid and solid; refuse destructors, and sewage disposal plants. The section also includes types of faulty methods and appliances which on principle ought to be avoided.

In addition to the regular museum exhibit, there is a collection of over 1,000 lantern slides illustrative of phases of hygiene. The slides have been so arranged as to be available for demonstrations as hand specimens.

A catalogue with text and full description of all the exhibits contained in the museum is issued by the University authorities, and may be purchased at the general office.

Library.

HONORARY LIBRARIAN:—C. F. WYLDE.

ASSISTANT LIBRARIAN:—MISS JEAN CAMERON.

ASSISTANTS:— MISS PAULINE M. CARRIERE.
MISS C. DAVIDSON, B.A.
MISS V. LOUISE DAVIDSON.

"The history of the Library is the history of the Faculty."
Professor Hal

The Library occupies the central part of the new building, the whole front of the second and third floors, as well as a portion of the first floor. On the third floor is the magnificent reading room, 76 x 24 feet, exceptionally well lighted, and capable of accommodating 75 readers. On this floor also are the journal room and private offices. The second floor contains the stack room, the book stacks having a total capacity of sixty thousand vollumes.

A special feature of the Library is the journal collection, and every effort is being made to complete this section as far as possible and thus to increase the value of the reference department of the Library.

There is also a great duplicate collection of journals from which distribution can be made on the exchange basis.

There is no printed catalogue, but there has been compiled a comprehensive list of continuations with their inclusive volumes, and this list will be available for loan by out-of-town borrowers.

The Library is for the use of the members of the Teaching Staff, graduates of the Medical Faculty of the University, undergraduate students in the Faculty, graduates from other colleges showing proper credentials, and registered nurses. It is felt that graduates living at a distance are not aware of the fact that books may be borrowed from the Library on payment of carriage both ways.

The Library is closed on Sundays, but is otherwise open daily during term from 9.00 a.m. to 6.00 p.m., except Saturday, when it closes at 5.00 p.m., and after Convocation it is open from 9.00 a.m. to 5.00 p.m., Saturdays 9.00 a.m. to 1.00 p.m. During July and August it is closed all Saturday.

STATISTICS.

October, 1921—May 6, 1922.

Readers	10,764
Books loaned	5,143
Journals loaned	1,364

Accessions from May 10, 1921—May 6, 1922.

Number of journals by gift	107
" " " " purchase	449
" " books by gift	134
" " " " purchase	239
" " transactions by gift	33
" " " " purchase	6
Total	968

Binding.—During 1921-22, 761 volumes were prepared and sent to the bindery. In November, 1921, a bindery was established in the Medical Building, and up to date 285 volumes have been bound here for use in the Library.

Cataloguing.—September, 1921—April 15, 1922

Books	747
Continuations	1,227
Total	1,974

The following journals have been subscribed to during the current year:

Acta oto-laryngologica; American Journal of Pharmacy; Archives internationales de pharmacdynamic; Archives itailenne de biologie; Archives of occupational therapy; Archivio di fisiologia; Archivos de oftalmologia Hispana-Americanos ; Biometrika; Book-post; Bulletins de la société de chemie biologique; Chemical Abstracts; Espana oftalmologia; International Journal of Gastro Enterology; Journal of Metabolic Research; Medical Science—Abstracts and review; Mother and Child; Revista Cubano de oftalmologia; Tohoku Journal of Experimental Medicine.

This increases the number of current journals being received at the Library to 296.

We have this year received donations from the following:

Abbott, Dr. M. E.; American Society for the Control of Cancer; Bender Hygienic Laboratory (Albany, N.Y.); Birkett, Dr. H. S.; Bourne, Dr. Wesley; Bulkley, Dr. L. D.; (New York); Byers, Dr. W. G. M.; Canadian Medical Association Journal; Canton Christian College (China); Clarke, Dr. T. L. E. (St. Kitts, B.W.I.); Connecticut—State of—Tuberculosis Commission; Ewing, Dr. A. E. (St. Louis, Mo.); Garland, Dr. G. M. (Boston); Girdwood, Miss; Gurd, Dr. F. B.; Hawes, Dr. J. B., 2nd (Boston); Henry, Dr. C. K. P.; Hess, Dr. A. F. (New York); Hutchison, Dr. J. A.; Iowa—University of; Johns Hopkins University, Pathological Laboratory; Kellogg, Dr. E. L. (New York); Klotz, Dr. Oskar (Pittsburgh, Pa.); Lakeside

Hospital (Cleveland, Ohio); Lindsay, Dr. L. M.; Macallum, Dr. A. B., McGill University, Redpath Library; Registrar's Office; Manchester;— St. Mary's Hospital; Martin, Dr. C. F.; Medical Research Council (London); Mills, Dr. C. K. (Philadelphia); Murray, Dr. J. A. (London); Ontario;— Provincial Board of Health; Packard, Dr. F. H. (Waverley, Mass.); Plummer, Dr. H. S. (Rochester, Minn.); RockefellerFoundation (New York); Roddick, Sir Thomas; Rolleston, Sir Humphrey (London); Sharpe, Dr. William (New York); Shaw, Dr. T. P.; Shepherd, Dr. F. J.; Solis-Cohen, Dr. Myer (Philadelphia); Stanford University Hospital (San Francisco); Todd, Dr. J. L.; Thompson, Dr. Lloyd (Hot Springs National Park, Ark.); United States War Department, Medical Section; Warbasse, Dr. J. P. (Brooklyn, N.Y.); Western University (London, Ont.); White, Dr. Hamilton; Whitnall, Dr. S. E.; Williams, Dr. C. M. (New York); Wood, Dr. Casey A. (Chicago).

Note:—Where no address is given the donor resides in Montreal.

McGILL MEDICAL SOCIETY.

The Society is composed of the registered students of the Faculty. Its purpose is:—

(1) To transact all matters of business connected with the undergraduate body.

(2) To stimulate interest along medical lines.

(3) To increase the facility with which the men can express themselves in public.

(4) To give the men an enjoyable social evening, at the same time developing a strong spirit of faculty loyalty.

Meetings are held every alternate Monday at which addresses are given by prominent professional men, medical and otherwise. Case reports are also read and discussed by the members themselves.

The annual meeting is the last meeting in the spring, when the following officers are installed: Hon. President (elected from the Faculty), President, Vice-President, Secretary, Assistant Secretary, Treasurer, Reporter and three Councilmen (of whom two are from the Faculty). These officers are elected by ballot one week before the annual meeting.

A prize competition has been established in the senior and junior subjects. The senior are open to all to write upon, while only students of the first three years are allowed to compete in junior subjects. The papers are examined by a board selected by the Faculty and two prizes are awarded in each division. The papers are subject to the call of the Executive on December 1st, and must be handed in for examination before February 1st. The Society also controls the Students' Reading Room. English and American journals as well as the leading daily newspapers are kept on file.

DEPARTMENT OF PHARMACY.

GENERAL ANNOUNCEMENT.

The Sixth Session of the Department of Pharmacy will be opened on Monday, October 2nd, 1922.

The Montreal College of Pharmacy, organized as a teaching body in 1867, for fifty years successfully carried on the work of instructing pharmaceutical students, and for many years it was the only institution in the Province of Quebec offering such instruction.

During the summer of 1916, the Montreal College of Pharmacy was taken over by the University and a Department of Pharmacy was instituted in connection with the Faculty of Medicine.

Special instruction on all subjects required by the future Pharmaceutical Chemist will be given in the class rooms and laboratories of the University, the students of Pharmacy having access to its splendid equipment.

The work of the Department embraces courses in Botany, Physics, Chemistry and Practical Chemistry, Theoretical and Practical Pharmacy, Dispensing, Materia Medica and Toxicology.

ENTRANCE REQUIREMENTS

For entrance into the Department of Pharmacy the University accepts the preliminary examination of the Pharmaceutical Association of the Province of Quebec in default of the B.A. degree or Arts matriculation (B.A.Course), particulars of which will be found on pp. 52 to 67.

The regulations regarding the Preliminary Examination of the Pharmaceutical Association of the Province of Quebec are as follows:

A diploma of Bachelor of Arts, Science, or Letters from a Canadian or British University, is accepted in lieu of the preliminary examination. In this case the candidate must register his application with the Secretary of the Association, and produce his diploma, together with personal proof of his identity.

The candidate for the study of Pharmacy must give satisfactory certificates of good morals, as well as identification and a recent photograph duly attested. He is also required to pay the fee in advance. The examination which the candidates undergo embraces the following subjects :—

GROUP I, LETTERS:—

1. Mother tongue (English or French), grammar, syntax, analysis, composition.
2. Auxiliary language (English or French), translation both ways.
3. Latin—Rules of grammar, translation of two first books of Cæsar.
4. History—Canadian, French, English and United States.

GROUP II, SCIENCES:—

1. Arithmetic.
2. Algebra and Geometry:—
   Algebra to 2nd degree exclusively.
   Geometry—The two first books of Euclid.
3. Physics and Chemistry:—
   Physics—Elementary notion on mechanics, weight, hydrostatics, pneumatics, capillarity, osmosis, optics and heat.
   Chemistry—General knowledge, definitions, the elements, principal laws of chemical reactions, properties of the principal metalloids and their principal compounds.
4. Geography.

For admittance, the candidate must obtain at least the following percentage in the different subjects:—

Mother tongue and arithmetic, 60 per cent.; other subjects, 50 per cent.; and on the total, 60 per cent.

The candidate who fails *in one subject only*, of the above groups, either of letters or of sciences, may present himself for examination in that subject at any one of the four subsequent examinations.

The candidate may try for science or letters at different examinations, separately, or for both of these two groups at the one examination. A clear and legible writing is required; any copy which is found hard to read will suffer a loss of 5 per cent. on points.

Fee, $20.00, or $10.00 for each group.

The preliminary examinations for admittance are held in Montreal and Quebec, the first Thursday of January and July of each year.

The registration of candidates for the examinations must be made at the office of the Registrar of the Association at least ten days before the date set for the examinations. A blank register form can be obtained from the Registrar, and must be signed by the candidate.

The major and minor examinations are held at Montreal, in April, and at Quebec in the fall.

EXAMINATIONS.

Examinations in each subject are held at the close of the course. All students must take these examinations, and those who pass in all subjects of the curriculum, as required by the Pharmaceutical Association of the Province of Quebec, will receive the University Diploma of Pharmacy. A minimum of 50 per cent. in each subject is required to pass, 75 per cent. for honours. The examination requirements of the Pharmaceutical Association of the Province of Quebec for license to practise Pharmacy in the Province are fully stated on page 315.

PRIZES.

For the session 1922–23 a medal is offered as a prize to the graduate who obtains the highest total percentage over 80 per cent.

TEXT BOOKS RECOMMENDED.

PHARMACY AND PRESCRIPTIONS.

Remington's Pharmacy, Bennett's Medical and Pharmaceutical Latin, Scoville's Art of Compounding, Art of Dispensing, Lucas' Practical Pharmacy.

CHEMISTRY.

Junior and Senior Chemistry.

Reference book:—Sadtler and Coblentz, Pharmaceutical and Medical Chemistry.

PHYSICS.

Balfour Stewart's Elementary Physics. Ganot's Physics, Peck's Ganot's Physics.

BOTANY.

Gray—Robinson Manual, Kraemer's Applied and Economic Botany.

MATERIA MEDICA.

British Pharmacopœia, United States Dispensatory, Squire's Companion to the British Pharmacopœia, Royal's Materia Medica, Sayre's Organic Materia Medica and Pharmacognosy, Heebner's Synopsis.

COURSES OF LECTURES.

CHEMISTRY.

Two courses will be required for the Diploma in Pharmacy in McGill University, namely, the junior and senior courses.

Junior Chemistry.—This includes elementary physical science and a university course on the general principles of the science of chemistry. A course in elementary physics will be taken with the students in the School of Commerce and will consist of a series of twenty-five lectures on the principles of physics and their application. The course is non-technical and is intended as an introduction and supplementary to the course in general chemistry. The course in general chemistry will consist of three lectures per week, given for the students in Arts and Medicine, on Monday, Tuesday and Thursday, at two o'clock. In addition to these lectures, there will be two laboratory periods each week of two hours, immediately following the lectures on Monday and Thursday. This course in general chemistry is intended to give a thorough grounding in the fundamental principles governing chemical action and the formation of chemical compounds, organic as well as inorganic.

Senior Chemistry.—The senior course in chemistry will be a short course of laboratory work on the identification and separation of organic and inorganic compounds of special importance in Pharmacy, and will include elementary toxicology, the assay of crude drugs, volumetric analysis, analysis of urine, the use of spectroscope, etc.

Both courses of chemistry will be given by Dr. Ruttan and members of the staff of the Department of Chemistry.

PRACTICAL PHARMACY.

Junior.—This course will embrace the preparation of a number of typical examples drawn from the official dilute acids, waters, liquors, plasters, extracts, fluid extracts, mixtures, liniments, oleates, syrups, ointments, etc., which might be enumerated as follows:—

Operations of grinding and powdering of drugs, mortars, mills, sieves, etc.

Heat and its application in Pharmacy; desiccation, etc.; steam, oil, water and other baths.

Evaporation, distillation, sublimation, fusion.

Solution, simple and chemical, crystallization, dialysis.

Filtration, decoloration, precipitation, washing and drying precipitates.

Maceration, infusion; infusions of the B.P.; decoctions of the B.P., preparation, preservation, etc.

Percolation, fineness of powder, moistening and packing.

Continuous and repercolation.

Waters; methods of preparation of water of B.P.
Hypodermic injections, lotions, juices, mixtures and mucilages.
Papers, plasters and suppositories.
Syrups, honeys, glycerites and confections.
Pills, powders, discs, tablets and lozenges.
Spirits, essences, elixirs, collodions and tinctures.
Wines, vinegars, liquid and solid extracts of the B. P.

Also Practical Dispensing, as follows:—

Practical Pharmacy, including Practical Dispensing.—General principles to be observed; simple and compound powders, mixtures, emulsions, their nature and preparation; the most suitable emulsifying agents; the best means of suspending insoluble substances in liquids. Pills and pill coating, gargles, lotions, liniments, suppositories, plasters, ointments, cachets, capsules, tablets and tablet triturates, lozenges and pastilles, lamellae, incompatibility, Pharmacy law.

Senior.—Practical Pharmacy in all its branches will be thoroughly dealt with, the different uses of up-to-date pharmacy being demonstrated. The course will include the following subjects;—

Clarification, illustrating the various methods, inluding deodorization, decolorization, and the various clarifacients.

Crystallization.—Re-crystallization, deliquescence, efflorescence, hydrous and anhydrous crystals.

Decantation, illustrating the various kinds of syphons, separating funnels, receivers, etc.

Dialysis.—Construction of the dialyser, utility and application of dialysis; designation of crystalloids, colloids, septa, etc.

Distillation.—Structure and method of employing the various forms of apparatus applicable to chemical and pharmaceutical processes.

Drug Grinding, including comminution, levigation, sifting, various mill sieves, etc.

Extraction.—Methods of extraction, maceration, digestion, infusion, decoction, lixiviation, percolation.

Filtration.—Filtering-media, their general and specific uses; folding of filters, rapid filtration, by application of pressures, funnels, etc.

Heat.—Its determination, thermometers, their construction, comparison of thermometric scales, sources of heat, and its use in pharmacy.

Metrology.—Weight, weighing, systems of weights in use, the balance, its construction, verification, care and use.

Percolation.—Construction of percolators, requisites for satisfactory percolation or exhaustion, menstrua, determination of alcoholic strength, fluid extracts, pressure, fractional and repercolation.

Precipitation.—Objects and uses, separation, washing, drying and weighing of precipitates, washing by decantation and displacement.

Solution.—Simple, chemical, saturated, super-saturated, circulatory displacement, solvents, refrigerating mixtures.

Specific Gravity.—Methods of determination in connection with both solids and liquids, pycnometers, hydrometers, etc.

Specific Volume.—Principle and its practical application, dilution of spirits and other liquids, calculations.

Vaporization.—Ebullition, boiling point and its determination, evaporation, etc., conditions affecting the process.

In conjunction with the foregoing, the class will be shown the modus operandi for the manufacture of different preparations of the B. P., and of others, including chemical solutions, elixirs, spirits, plasters, emulsions ointments, granular effervescent salts, crystal and scale salts of iron resins, oleo resins, etc.

Particular attention will be given to pharmaceutical assaying, such as opium, ipecac, belladonna, cinchona, nux vomica.

MATERIA MEDICA AND THEORETICAL PHARMACY

JUNIOR.—This will include instruction in Pharmaceutical jurisprudence, poison schedules, weights and measures.

Classification of the official organic drugs, including leaves, flowers, fruits, seeds, herbs, barks, gums, resins, etc., with the geographical source, parts used, and official preparation of each.

POSOLOGY.—Therapeutic terms and definitions

THEORETICAL PHARMACY—This will embrace the theories of manufacture of the simple preparations of the B. P., such as medicated waters, syrups, tinctures, compounds, powders, pill masses, etc.

DISPENSING.—Prescription reading and writing, dispensing of prescriptions, incompatibilty, and other difficulties.

SENIOR.—Complete classifications of all official organic and inorganic drugs, giving, in the former, the mode of collection and preservation, geographical and botanical sources and parts used—and in both instances the constituents and impurities, also the medicinal properties of each, with their preparations.

Animal drugs, such as pepsin, pancreatin, thyroids, etc., will be dealt with in a similar manner.

Posology will include the minimum and maximum doses of all official drugs and preparations.

Pharmacognosy will include examination of drugs with aid of microscope.

Toxicology will include toxic doses of potent drugs, also chemical and medicinal antidotes.

Theoretical Pharmacy will embrace the theories of manufacture of the more complex galenical official preparations.

Adulterants, impurities and the methods of detection.

BOTANY

GENERAL BOTANY.—General external morphology of the higher plants (higher cryptogams and phanerogams). Anatomy and histology, the latter treated with more especial reference to methods of drug identification by means of the microscope.

GENERAL PHYSIOLOGY.—Elementary plant physiology, treated briefly.

SPECIAL BOTANY.—Structure of those plants below the pteridophytes of use or interest to the pharmacist, treated briefly; special morphology of pteridophytes and phanerogams, and their classification. Attention will more especially be given to those families (about 30) of plants chiefly represented in materia medica.

EXAMINATION TO OBTAIN THE CERTIFICATE FOR ASSISTANT PHARMACIST.

To become an assistant in pharmacy the candidate must furnish proofs of having registered three years as a student in pharmacy, also that he has served at least three years under a doctor or druggist duly registered; he must pay the fee required, and pass an examination on the medico-pharmacal sciences, physics, chemistry and pharmacy, (Art. 4997, Law of Pharmacy.)

The candidate must be able to read prescriptions in script, translate them into English and French, write fully and legibly all the abbreviated words, point out the doses which are unusual, prepare, label and address properly the prescription, under the scrutiny of the examiner.

The candidate must recognize the Galenic preparations of the B. P., such as extracts, tinctures, powders, etc.; describe the composition of the compound preparations, giving the proportions of their active ingredients the mode of preparation, and the doses. He must be able to describe properly in the presence of the examiner the different official Galenic preparations.

He must recognize samples of roots, barks, leaves, fruits, etc., employed in medicine, and name the official preparations into which they are incorporated; have a knowledge of the laws of physics and chemical combinations, of the nature and properties of the elements and their compounds, and recognize the acids, oxides, salts and other chemical bodies, described in the B. P., and also give their doses.

FINAL EXAMINATION FOR LICENTIATE IN PHARMACY.

The Final Examination to be passed by the candidate includes all the subjects required for the Assistant in Pharmacy Examination, but a more thorough knowledge of these sciences is required, also practical, analytical chemistry and botany. (Art. 4997.)

The candidate will have to describe the methods of obtaining acids, oxides, salts and other chemical compounds described in the B. P., explain the decompositions which take place when they are made, by means of written equations and diagrams, and also possess a good knowledge of the new synthetic products.

He must recognize the more important medicinal plants; know the therapeutics and posology of B. P. preparations, also the non-official plants which are used commonly, know the physiology and anatomy of plants, the shape, structure and characteristics of the roots, barks, leaves, flowers, fruits, etc.; their physiological functions and their natural order.

He will be required to know the best antidotes for urgent cases of poisoning by the ordinary toxics, and must pass in a satisfactory manner the test on practical pharmacy, analytical chemistry, volumetric, and urine analysis.

He must also show that he is registered as an assistant pharmacist, and give proofs of having duly served four years under a doctor or druggist duly registered; that he has followed for two years the medico-pharmacal classes, two years of physics and chemistry classes, one year's course in botany and other natural sciences, according to the programme established in institutions incorporated and authorized by the council of the Association; pass the examinations on the above subjects, and pay the fee. (Art. 4997, Law of Pharmacy.)

However, the student in pharmacy or the certified clerk may, if he so desires, give up a whole twelve months exclusively to the study of pharmacy. (Art. 4997.)

The Board of the Pharmaceutical Association will accept only one course in any subject in the same year; classes attended during the same scholastic year in different schools will count for one course. Private or academy classes will not be accepted.

At the junior and final examinations, students must obtain 40 per cent. of points on each subject, at the written examination, and 50 per cent. on the total number of points, to be admitted to the oral examinations; but the student who passes satisfactorily the written examination is not obliged to begin it over again if he fails in the subsequent oral examination. At the oral examination, they must obtain at least 40 per cent. on each subject, and finally to obtain their license, they must obtain 60 per cent. of the total examinations, oral and written united. Any candidate receiving less than 40 per cent. on any one subject in the written or oral examinations, may apply at the following examination to be examined on this one subject. A candidate who fails to obtain the necessary 40 per cent. in two or more

subjects must take all subjects of the examination over again. Any candidate who does not apply at the next examination following to take the subject in which he has failed, or who tries and fails again, will have to take the whole examination, either written or oral, as the case may be.

No certificate of examination will be accepted from any Pharmaceutical Association or College, unless it has been granted after a service of four years in a drug store and following a course of studies which in the opinion of the Board of the Association is equivalent to that required by the articles 4997-4998 of the Law of Pharmacy of the Province of Quebec.

Candidates who apply for the final examination, and who are not twenty-one years old, will be admitted to the examination, but if they succeed their license will be retained until they have attained the age of twenty-one.

FEES FOR THE EXAMINATION.

The fees to be paid by candidates, besides the registration fee, before they are admitted to the examination, are as follows: Preliminary examination, $20.00, or $10.00 for each group. Assistant in pharmacy, $15.00- and pharmacist, $25.00. These fees must be paid in advance to the Registrar of the Association.

Any person having registered his name for an examination and not attending will lose the fee paid.

In addition to the above, a sum of $25.00 is required for the Diploma of Licentiate in Pharmacy.

FACULTY OF LAW.

HISTORICAL STATEMENT

The teaching of law at McGill began in 1848, when a few lectures in law were arranged for students in the Faculty of Arts. In 1853 the Faculty of Law was established with a staff of three members, the Hon. Wm. Badgley, Mr. J. J. C. Abbott and Mr. F. W. Torrance, Mr. Badgley holding the office of Dean. All three subsequently attained distinction. Mr. Badgley and Mr. Torrance both went on to the Bench, while Sir John Abbott entered public life and was for a short time Prime Minister of Canada. For more than half a century the Faculty devoted itself wholly to the training of students who intended to practise law in the Province of Quebec. During this period many of its professors and graduates rose to prominent positions in the public life of Canada, among them being Sir Wilfrid Laurier, who took his degree in 1864.

The appointment of Dr. F. P. Walton as Dean of the Faculty in 1897 marked the beginning of a new development. Hitherto the whole of the teaching staff had consisted of judges and practising counsel in the City of Montreal. Dr. Walton was the first *professeur de carrière*. He held the chair of Roman Law, and the establishment of a full-time professorship did much to bring the Faculty into closer touch with the general life of the University.

In 1914, Dr. Walton resigned to take up an important legal position in Egypt, and was succeeded by Dr. Robert Warden Lee, Fellow of Worcester College, Oxford, who has only recently resigned the office upon his appointment to the new chair of Roman-Dutch Law, founded at Oxford by the Rhodes Trustees. Dr. Lee's chief contribution to the history of McGill lies in his initiation of the policy which aimed at developing the Law Faculty from a purely provincial into a national law school, undertaking to provide the best possible legal education for students from all parts of Canada and elsewhere, while continuing to provide professional education of the highest standard for students intending to practise law in the Province of Quebec. During his tenure of the Deanship a new chair of "Jurisprudence and Common Law" was established in 1919, and this was followed in 1920 by the foundation of a third whole-time chair, with the title of "Constitutional Law." Similar provision having recently been made for Commercial Law, the Faculty now has four teachers devoting their whole time to the work of the University.

In December, 1921, the Faculty was elected to membership in the Association of American Law Schools. At present McGill is the only Canadian Law School which conforms to the requirements for membership. The Faculty has also been registered by the New York State

Department of Education as complying with the requirements laid down by the New York Court of Appeals in the regulations governing admission to the Bar.

COURSE OF STUDY,

The Faculty of Law now aims at giving a sound practical and scholarly education in the principles of:—

THE CIVIL LAW OF QUEBEC.
THE COMMON LAW AND STATUTE LAW OF CANADA.
CONSTITUTIONAL AND MUNICIPAL LAW.
PUBLIC AND PRIVATE INTERNATIONAL LAW.
INSTITUTES OF ROMAN LAW.
THEORETICAL AND COMPARATIVE JURISPRUDENCE.

The courses selected by students will largely depend upon whether they wish to practise law in the Province of Quebec or in some common law jurisdiction. Those who wish to practise in Quebec must be careful to select lectures which will comply with the statutory requirements of the Quebec Bar, a summary of which will be found on page 330. Particulars of the Bar requirements in other provinces can be obtained from the secretaries of the various provincial Bar societies.

Students intending to practise at the Quebec Bar or as notaries in the Province of Quebec will take the civil law course leading to the degree of B.C.L. Other students will take the common law course for the degree of LL.B.

The teaching of several subjects will be mainly conducted according to the case method; that is to say, the principal feature of the instruction will be the free discussion by teacher and students of decided cases and other authorities.

The following classification of the lectures will give an outline view of the teaching provided for civil law and common law students respectively. It is liable to modification from time to time, and students will be at liberty, subject to permission from the Dean, to select lectures from other courses in addition to their own, should they wish to do so.

FIRST YEAR.

Civil Law (B.C.L.)	Common Law (LL.B.)
ROMAN LAW.	JURISPRUDENCE AND COMPARATIVE LAW.
JURISPRUDENCE AND COMPARATIVE LAW.	REAL PROPERTY.
IMMOVABLE PROPERTY.	CONTRACTS.
OBLIGATIONS.	TORTS.
LAW OF PERSONS.	CRIMINAL LAW.
CRIMINAL LAW.	LEGAL HISTORY (British and Canadian).
CIVIL PROCEDURE (Quebec).	CIVIL LAW OF OBLIGATIONS.
LEGAL HISTORY (Quebec).	LAW OF PERSONS.

SECOND AND THIRD YEARS.

Civil Law	Common Law
IMMOVABLE PROPERTY.	REAL PROPERTY, LAND TITLES, etc.
*EVIDENCE.	*EVIDENCE.
*NEGOTIABLE INSTRUMENTS AND BANKING.	*NEGOTIABLE INSTRUMENTS AND BANKING.
*COMMERCIAL SALES.	*COMMERCIAL SALES.
INSURANCE.	INSURANCE.
CORPORATIONS.	CORPORATIONS.
*BANKRUPTCY AND INSOLVENCY.	*BANKRUPTCY and INSOLVENCY.
PUBLIC INTERNATIONAL LAW.	PUBLIC INTERNATIONAL LAW.
*PRIVATE INTERNATIONAL LAW.	*PRIVATE INTERNATIONAL LAW.
AGENCY.	AGENCY.
PARTNERSHIP.	PARTNERSHIP.
SHIPPING AND CARRIERS.	SHIPPING and CARRIERS.
CONSTITUTIONAL LAW.	CONSTITUTIONAL LAW.
MUNICIPAL CORPORATIONS.	MUNICIPAL CORPORATIONS.
*WILLS, SUBSTITUTIONS, etc.	WILLS and ADMINISTRATION.
CIVIL PROCEDURE (Quebec).	*PROCEDURE and PLEADING.
*MARRIAGE COVENANTS, etc.	*DOMESTIC RELATIONS.
LEASE, HIRE, and PRESCRIPTION.	TRUSTS.
*SUCCESSIONS AND GIFTS.	EQUITABLE REMEDIES.
*PUBLIC UTILITIES.	LEGAL DRAFTSMANSHIP.
ROMAN LAW (special topics).	
NOTARIAL LAW (for notarial students only).	

*Lectures on these subjects will not be given in the session 1922-23.

Each student will follow the course of study prescribed for him by the regulations of the Faculty. The progress of a student is reckoned by points. Each point represents the successful completion of a course of study involving attendance at lectures for one hour a week during one half-session. For example, a course of study involving attendance at lectures for two hours a week throughout the whole session would have a credit value of four points.

No student will be admitted to the Second Year who has failed to obtain twenty points, and no student will be admitted to the Third Year who has failed to obtain forty points, or who is deficient in any First year subject. No student will be permitted to proceed to a degree who has not obtained sixty-four points upon his whole course.

A student may attend lectures not exceeding six points in value in any one session in addition to those prescribed for his course. No student can receive credit for such additional courses unless his attendance upon them has been approved by the Dean.

Subject to the approval of the Faculty in each case, a student may obtain credit for not more than seven points for a course of legal study successfully completed by him in the summer session of a law-school of sufficiently good standing in Canada or in the United States.

The Faculty desires to impress upon all students who intend to practise law in the Province of Quebec the necessity of obtaining a familiar knowledge of French. In this Province it is essential that a practising lawyer should be able to write and speak French with fluency, and it is highly desirable that every educated lawyer in any part of Canada should have at least a reading knowledge of the French language.

ADMISSION TO THE FACULTY.

Students who have successfully completed one year in Arts will be admitted to the Faculty without further examination. Other students will be required either to pass the Senior Matriculation examination for the University, or to satisfy the Faculty that they have attained a standard sufficient to admit them to the Second Year of the Arts course. Students whose right to enter the Second Year of the Arts course is conditional upon their passing supplemental examinations are not eligible for admission to the Faculty of Law.

After the 1st September, 1925, no student will be admitted to the Faculty unless he has completed two years in Arts, or can show an intellectual equivalent.

Particulars of the Senior Matriculation Examination may be obtained on application to the Registrar of the University.

Students who, in addition to complying with the above requirements, have successfully completed at least one year's resident study of law in a recognized law-school may be admitted to Second Year standing upon satisfying the Faculty that their standard of attainment is sufficient to justify the granting of this privilege. If necessary, an examination will be held to determine the degree of the applicant's proficiency, and for any such examination a special fee of $5 per paper will be required.

In exceptional cases students who have successfully completed two or more years' resident study at a recognized law-school may be admitted to Third Year standing by special vote of the Faculty.

The attention of students desiring to practise law in the Province of Quebec is called to the fact that the regulations of the Quebec Bar require the whole course of legal study to be pursued at a university within the Province. Such students, therefore, cannot be granted credit for studies pursued at other universities outside the Province.

Women are admitted to the Faculty on the same terms as men. As the law stands at present, they cannot be admitted to the Bar or to the notarial profession in the Province of Quebec.

REGISTRATION.

All students must register in person at the office of the University Registrar between Monday, September 11th, and Friday, September 15th, both dates inclusive. Students who wish to consult the Dean personally with regard to the course should register not later than Wednesday.

Students registering later than September 15th will be required to pay a late registration fee of $5.00 at the time of registration. This will in no circumstances be refunded except by special permission of the Faculty.

Students must bring with them at the time of registration the evidence necessary to show that they are entitled to admission into the Faculty.

New students, immediately after completing their registration, are required to attend in the Dean's office for the purpose of signing the admission book of the Faculty. No student will be entered for any course of lectures until he has signed this book.

EXAMINATIONS.

There will be a written examination at the end of each session upon the work done during that session. At the final examination questions may be set upon any subject studied by the student during the three-year course. The written examination may be supplemented by an oral examination in cases where the Faculty may consider such action desirable.

At the close of each session all students must present themselves for examination in every subject for which they are registered. No Student will be permitted to present himself for examination who has not regularly attended the lectures upon the subject, unless he has been prevented by some necessary cause and his absence has been excused by the Dean.

The pass mark is 50% for each paper and 60% for the whole examination. Successful students will be graded in three classes, and the names of those in each class will be published in alphabetical order.

Subject to the approval of the Faculty in each case, a student who has been prevented by illness from taking certain papers in the sessional examination may be permitted to take supplemental papers on the same subjects in September. A fee of $5.00 will be payable in respect of each paper. No other supplemental examinations will be granted, but students who have obtained the requisite number of points may be permitted to present themselves again at the close of the next session for examination in the subjects in which they have previously failed.

At all examinations in the Faculty students are at liberty to write their answers either in English or in French.

PRIZES AND SCHOLARSHIPS

The Elizabeth Torrance Gold Medal is awarded to the Civil Law student who obtains the highest marks in the Final Examination.

A special money prize may be awarded, in the discretion of the Governors, to the Common Law student who obtains the highest standing in the Final Year.

The Montreal Bar Association awards a prize of $50.00 to the student who obtains the highest standing in Commercial Law, and the Junior Bar Association a prize of $15.00 to the Civil Law student who obtains the best marks in civil procedure in the Final Year.

The "Alexander Morris Exhibition," of the value of $50.00, founded in memory of the late Hon. Alexander Morris, M.A., D.C.L., of Toronto, will be awarded to the student who obtains the highest standing in the Second Year.

Other prizes may be awarded in the discretion of the Governors.

The "Macdonald Travelling Scholarship" was founded by the will of the late Sir William Macdonald "for the purpose of enabling English-speaking Law students to take a course of studies in France," the testator "deeming it of great importance that the English-speaking members of the legal profession should be proficient in the French language." The value of the scholarship is theincome derived from a capital sum of $1,200, and it is tenable in France for one year. The award is made in the discretion of the Faculty to a student of the graduating class who has obtained first or second class honours in the Final Examination.

Students in the Faculty are eligible for election to the Rhodes Scholarships tenable at the University of Oxford for a term of three years. Application should be made in the first instance to the Registrar of the University.

DEGREES,

The degrees granted in the Faculty are Bachelor of Civil Law (B.C.L.) and Bachelor of Laws (LL.B.).

The degree of B.C.L. is granted to those students who successfully follow the course of study in civil law, and the degree of LL.B. to those students who successfully follow the common-law course. The amount of work required and the standard of proficiency exacted will be the same for students in either class. Each course covers three years.

No student under the age of 21 years will be eligible for a degree.

The degrees of LL.M. and D.C.L. are granted under the authority of the Graduate School of McGill University. The regulations governing these degrees are given in the Bulletin of the Graduate School.

The Faculty strongly recommends to all students who desire to attain distinction in their profession or who wish to take up the teaching of law the advantage of devoting an extra year to special study and preparing a thesis for the degree of LL.M. In the case of students who intend to practise in Montreal a course of special study is compatible with attendance in an office during the greater part of the day.

PARTIAL STUDENTS.

The Faculty may admit a limited number of suitable persons to attend selected courses of lectures without matriculating in the University. Such permission will only be granted to applicants of at least twenty-one years of age who satisfy the Faculty of their capacity to undertake with advantage the study of law. They will not be allowed to proceed to degrees, but will be entitled to receive a certificate specifying the course of study which they have successfully pursued and the class which they have obtained in the examination.

Partial students will pay fees calculated at $7.00 per point for the courses which they attend.

ARTS STUDENTS.

Students of the Third or Fourth Year in the Faculty of Arts who have obtained permission from the Dean of that Faculty may attend lectures and present themselves for examination in the following subjects:—

ROMAN LAW.
JURISPRUDENCE.
OBLIGATIONS.
CONTRACTS.
TORTS.
LEGAL HISTORY.
CONSTITUTIONAL LAW.
PUBLIC INTERNATIONAL LAW.

LIBRARY.

The Law Library of the University at present contains over 7,500 volumes catalogued and in use, as well as about 5,000 volumes, mainly older works, which are now being catalogued and arranged. The principal reports of Canada, the United Kingdom, and France are taken, as well as a selection of reports from the United States and elsewhere. The annual appropriation for the maintenance of the Law Library has now been largely increased.

There is a small lending library, from which students can obtain text-books for the session on payment of an ad valorem fee.

Students in the Faculty are permitted to use the Library of the Court House, which contains a large number of the principal American reports, both of the Federal and of the State courts. The general Library of the University is also available for the use of law students.

MOOT COURTS

Under the supervision of the professors moot courts are held from time to time during the session in order to afford students practice in the preparation and presentation of legal arguments.

FEES.

The sessional fee of $150.00 is payable to the Bursar not later than the 4th October. Students who prefer to do so may pay the fee in two instalments of $77.00, the second of which is due not later than the 1st February.

Students who make default in payment are liable to be removed from the Faculty in accordance with the regulations laid down in the University Calendar.

Men students pay an additional fee of $12.00 for the support of various undergraduate activities and for athletics. This fee has been sanctioned at the request of the student body.

The regular graduation fee is $12.50. Where the degree is conferred *in absentia* an additional fee of $20.00 will be exacted, unless the student has been specially exempted by the Faculty.

Partial students will pay fees calculated at the rate of $7.00 per point (see p. 7) for the courses which they attend and a fee of $3.00 for athletics and athletic grounds.

In the Graduate School a sessional fee of $40.00 is payable for the resident course of study leading to the degree of LL.M. The graduation fees are $20.00 for the LL.M. and $80.00 for the D.C.L.

Every student is required to deposit with the Bursar the sum of $5.00 as caution money to cover damage done to University property. The balance, less any deductions, will be returned at the close of the session.

PHYSICAL EDUCATION.

Men students in the First and Second Years are required to comply with the University regulations regarding physical education. A printed copy of these requirements will be supplied to students at the time of registration.

Women students will obtain their instructions from the Physical Director for Women, Royal Victoria College.

PROGRAMME OF STUDIES

Lectures marked * are intended specially for Civil Law students, and those marked † specially for Common Law students.

Pending the preparation of a series of case-books suitable for Canadian use the lecturers will indicate to the students the cases and other authorities required for study in each course.

FIRST YEAR LECTURES.

*ROMAN LAW.

Three hours throughout the session. Mr. Rose.

CRIMINAL LAW.

Two hours throughout the session. Hon. Mr. Justice Greenshields

OBLIGATIONS.

Two hours throughout the session. Hon. Mr. Justice Howard.

JURISPRUDENCE AND COMPARATIVE LAW.

Two hours in the first term. Professor Smith.

† CONTRACTS (COMMON LAW).

Two hours throughout the session. Professor Smith.

† TORTS (COMMON LAW).

One hour in the first term and two hours in the second term. Professor Smith.

†REAL PROPERTY (COMMON LAW), PART I.

Two hours throught the session. Professor Mackay.

*CIVIL PROCEDURE (QUEBEC).

Two hours Hon. Mr. Justice Surveyer.

*IMMOVABLE PROPERTY (QUEBEC), PART I.

Three hours in the first term. Mr. Rose.

PERSONS (CIVIL CODE).

Two hours in the first term. Hon. Mr. Justice Surveyer.

† LEGAL HISTORY (BRITISH AND CANADIAN).

One hour in the first term. Professor Mackay.

* LEGAL HISTORY (QUEBEC).

Two hours in the first term. Mr. Rose.

SECOND AND THIRD YEAR LECTURES,

The lectures to senior students are divided into two groups, given in alternate years.

Subjects treated in the Session 1922-23.

* LEASE, HIRE, AND PRESCRIPTION (CIVIL CODE).

Two hours a week throughout the session. Asst. Professor Chipman.

PUBLIC INTERNATIONAL LAW.

One hour throughout the session. Professor Mackay.

* CIVIL PROCEDURE (QUEBEC).

Two hours in the first term. Hon. Mr. Justice Surveyer.

CONSTITUTIONAL LAW.

Two hours in the first term and one hour in the second term.
Professor Mackay.

INSURANCE.

Three hours in the first term. Assistant Professor Tyndale.

† TRUSTS (COMMON LAW).

Two hours in the first term. Professor Smith.

CORPORATIONS.

Two hours in the first term. Hon. Mr. Justice Martin.

AGENCY.

Two hours in the first term. Assistant Professor Tyndale.

PARTNERSHIP.

One hour in the first term. Assistant Professor Tyndale.

NOTARIAL LAW (FOR NOTARIAL STUDENTS ONLY.)

Two hours in the first term. Mr. Bridgman.

* SUCCESSIONS AND GIFTS (CIVIL CODE).

Two hours in the second term. Mr. Beullac.

† WILLS (COMMON LAW).

Two hours in the second term. Professor Smith.

† REAL PROPERTY (COMMON LAW).

Two hours in the second term. Professor Mackay.

* IMMOVABLE PROPERTY (CIVIL CODE).

Two hours in the second term. Mr. Rose.

CARRIERS, MERCHANT SHIPPING, AND ADMIRALTY LAW.

Three hours in the second term. Assistant Professor Tyndale.

* MUNICIPAL CODE OF QUEBEC.

Two hours in the second term. Mr. Rinfret.

* ROMAN LAW (SPECIAL TOPICS).

One hour in the second term. Mr. Rose.

† LEGAL DRAFTSMANSHIP (COMMON LAW).

Two hours in the second term. Professor Mackay.

Mr. Tyndale will conduct a special tutorial class in practical work for civil law students of the third year. Two hours a week in the second term.

SESSION 1923-24

The list given below corresponds to that arranged for the session of 1921-22. Students will understand that it is liable to modification.

* MARRIAGE CONVENANTS AND MINOR CONTRACTS (CIVIL CODE).

Assistant Professor Chipman.

PRIVATE INTERNATIONAL LAW.

Professor Macdougall.

† REAL PROPERTY (COMMON LAW).

Professor Mackay.

EVIDENCE (CIVIL CODE AND COMMON LAW).

Professors Wainwright and Mackay.

NEGOTIABLE INSTRUMENTS AND BANKING.

Assistant Professor Tyndale.

* IMMOVABLE PROPERTY (CIVIL CODE).

Mr. Rose.

* CIVIL PROCEDURE (QUEBEC).

Hon. Mr. Justice Surveyer.

† PROCEDURE AND PLEADING (COMMON LAW).

Professor Mackay.

† EQUITABLE REMEDIES

Professor Smith.

SALE OF GOODS.

Assistant Professor Tyndale.

BANKRUPTCY AND INSOLVENCY.

Hon. Mr. Justice Martin.

* WILLS, SUBSTITUTIONS, AND TRUSTS (CIVIL CODE).

Mr. Beullac.

† DOMESTIC RELATIONS (COMMON LAW).

Professor Smith.

* ROMAN LAW (SPECIAL TOPICS).

Mr. Rose.

* PUBLIC UTILITIES IN QUEBEC.

Mr. Rinfret.

CRIMINAL PROCEDURE.

Mr. Rose.

NOTARIAL LAW (FOR NOTARIAL STUDENTS ONLY).

Mr. Bridgman.

SPECIAL LECTURES.

The Hon. Mr. Justice Mignault will deliver two lectures on "Legal Ethics" in the course of each session.

ADMISSION TO THE PRACTICE OF LAW IN QUEBEC.

The attention of students who wish to be admitted to the Bar or to the notarial profession in Quebec is drawn to the following summary of the statutory provisions governing the practice of law in the Province:—

I. REGULATIONS APPLICABLE TO THOSE WHO INTEND TO BECOME MEMBERS OF THE BAR.

N.B.—The articles are here abridged.

Article 4522 R.S.Q.—Examinations for admission to study and to practise law in the Province of Quebec are held at the time and place determined by the General Council.

The examinations are held alternately in Montreal and Quebec every six months; namely, at Montreal, on the second Tuesday of each January, and at Quebec, on the first Tuesday of each July.

All information concerning these examinations can be obtained from the Secretary-Treasurer of the General Council. The present General Secretary is Mr. Victor Martineau, K.C., 66 St. James Street, Montreal.

Article 4524.—Candidates must give notice, as prescribed by this article, at least one month before the time fixed for the examination, to the Secretary of the section in which he has his domicile or in which he has resided for the past six months.

Article 4475.—This article provides that candidates holding the degree of Bachelor of Arts, Bachelor of Science, or Bachelor of Letters, from any Canadian or British University are dispensed from the examination for admission to study. Such candidates are required to give the notice mentioned above.

Article 4526 R.S.Q. (as altered by by-law of the General Council).—On giving the notice prescribed by Article 4524, the candidate pays the Secretary a fee of $2.00, and makes a deposit of $125.00 for a complete certificate of admission to study; of $70.00 for a partial certificate of admission to study; and of $200.00 for admission to practice, which deposit, less $30.00, is returned in case of his not being admitted.

Article 4531.—To be admitted to practice, the student must be a British subject and must have studied regularly and without interruption during ordinary office hours, under indentures entered into before a notary, as clerk or student with a practising advocate during four years, *dating from the registration of the certificate of admission to study.* This term is reduced to three years in the case of a student who has followed a regular law course in a university or college in this Province and taken a degree in law therein.

The By-laws passed by the General Council of the Bar of the Province of Quebec provide as follows:—

Article 51.—A course of lectures on law given and followed at a university or law school of this Province, and the diploma or law degree

conferred on students by such university or law school, shall count with reference to the Bar Act only if the course of study hereinafter outlined has been effectively followed by the university or law school and by the holder of the diploma. (R.S.Q., ss. 1483, §4531.)

Article 52.—A regular law course in a university or law school of this Province consists of seven hundred and eighty-five lectures of one hour each. These lectures are given on the various subjects in the following proportions:—

ROMAN LAW:—103 lectures:—This course comprises an introduction to the study of law, with explanatory remarks and comments on the Institutes of Justinian and on the principal Roman jurisconsults.

CIVIL, COMMERCIAL AND MARITIME LAW:—413 lectures:—The course on these subjects must cover a period of at least three years. It comprises the history of French and Canadian law, explanatory remarks and comments on the Civil Code and on the statutes respecting commerce and shipping.

CIVIL PROCEDURE:—103 lectures:—This course must extend over at least two years. It comprises explanatory remarks and comments on the Code of Civil Procedure and of its statutory amendments, a study of the organization of the civil court of this Province and the history of the different judicial systems of the country; also the special modes of procedure provided by the statutes and by the by-laws in general, as well as the Bar Act and the By-laws regarding the discipline of the Bar.

PUBLIC AND PRIVATE INTERNATIONAL LAW :—21 lectures:—This course comprises an historical outline, the sources of this law and of its subject matter, its objects (primary and secondary rights of sovereign states), rules of war, commercial and extradition treaties, etc., in force in Canada, as well as the rights and obligations of the citizens of the Province of Quebec and of Canada, and of aliens in the event of conflict of laws.

CRIMINAL LAW:—69 lectures:—This course comprises the history of Canadian criminal law, the organization of the criminal courts, criminal procedure, comments on the criminal law of the country, a comparative study of English and Canadian criminal law. The lectures shall extend over two years.

CONSTITUTIONAL AND ADMINISTRATIVE LAW:—41 lectures:—This course comprises an enquiry into the different constitutional enactments and public institutions of the country, the powers, the organization, the procedure of the Federal Parliament and of the Provincial Legislatures, the laws on Education, and the Municipal Code.

COMPARATIVE LAW:—30 lectures:—This course comprises a concise enquiry into the English common law, and a general knowledge of the main principles underlying the civil and commercial laws of the other Provinces of Canada.

Article 53:—The candidate for admission to practice who has obtained a law degree from a university or law school of this Province, must file, together with this notice, a certificate from the principal or head of such university or law school establishing that he has followed a law course in such university or law school during at least three years in conformity with the Bar Act, and moreover specifying the number of lectures he has actually attended in each subject comprised in the foregoing curriculum during each of the three years and during the three years as a whole.

Article 54:—The examiners must refuse to accept such degree as valid under the provisions of the Bar Act, if they are of the opinion that the course of study hereinabove outlined has not been effectually followed by the candidate.

II. REGULATIONS APPLICABLE TO THOSE WHO INTEND TO BECOME NOTARIES.

For the regulations applicable to candidates for the notarial profession, see Revised Statutes of Quebec, Articles 4774-4807.

FACULTY OF DENTISTRY.

GENERAL ANNOUNCEMENT.

In McGill University, Dentistry was established as a department of the Faculty of Medicine, and this fact insured for the student the very best training in anatomy, physiology, histology, embyrology, bacteriology, chemistry, etc., those fundamental subjects, a knowledge of which underlie a successful practice along modern lines of preventive dentistry.

During the session 1919-20 Dentistry was made a separate Faculty by the University.

The infirmary, or Dental Clinic, in which practical operations are performed by the students, is an integral part of the out-patient department of the Montreal General Hospital, and is kept open during the entire year. There are patients sufficient and much more than sufficient to supply all demands for teaching in both operative and prosthetic dentistry.

In addition to the usual cases that appear at every dental infirmary, students of McGill have the advantage of seeing and treating many cases of fracture of both upper and lower jaw, because of the many accidents that occur in every large city.

In addition to this, great numbers of patients with diseased conditions of the mouth and associate parts, are continually being referred to the Dental Clinic.

The medical and dental library of McGill is one of the finest in America, so that students who desire may have the benefit of a great reference library.

The Dean devotes his entire time to the work under his care, thus insuring for the students careful and continuous oversight in both theoretical and practical work.

This is of great advantage in creating the atmosphere and personal relation between teacher and student, so essential to the successful life of an educational institution.

If any who are interested in the study of dentistry will write to Dr. A. W. Thornton, Dean of the Faculty, he will be glad to furnish all possible information.

The Dental Department of McGill University was established in the autumn of 1903. At that time the didactic teaching and laboratory work were carried on in the lecture rooms and laboratories of the medical building, clinical instruction being given at the Dental Infirmary, a clinic conducted by the Dental Association of the Province of Quebec. This arrangement fulfilled the requirements of the department for a time, but soon the need of separate quarters for didactic and laboratory instruction and also of improved clinical facilities was felt. These have been supplied, first by the

appropriation of a portion of the east wing of the new medical building, and, second, by the establishment of a clinic at the Montreal General Hospital.

The work of the nineteenth session of the Faculty of Dentistry will begin on Monday, October 2nd, and will continue until April 30th, 1923

The new quarters of the Faculty occupy the northern half of the first floor of the east wing of the new medical building. In addition to private rooms for the teaching staff, the Faculty contains all necessary lecture rooms and laboratories. The laboratories are equipped with the latest apparatus and appliances for teaching practical dental operations.

During the early part of the session of 1908-09, the Governors of the Montreal General Hospital, acting on a request from the University, established a clinic in dentistry in connection with the out-patient department of the hospital.

This Dental Clinic has had a most phenomenal growth.

The rapid growth of the Faculty of Dentistry made necessary the enlargement of our facilities for teaching Clinical Dentistry. The University, acting conjointly with the Governors of the Montreal General Hospital, thoroughly remodelled the space used for the Dental Clinic, and in addition erected a new wing 80 ft. x 36 ft.—the entire wing being occupied by Dental chairs and equipment. This gives to the Faculty of Dentistry one of the most thoroughly equipped Dental Clinics on the Continent. In addition to the splendid equipment and facilities provided in the Hospital Clinic, students of the Dental Faculty of McGill University enjoy the closest relationship with the entire work of one of the largest hospitals on this Continent. This close relation with the Hospital was made possible by the action of the Governing Body when the work of the Dental Clinic was put on the same basis as all other departments of the Hospital. Notwithstanding our greatly increased facilities for dealing with a large number of patients the number of patients attending the Dental Clinic is still adequate, and more than adequate to supply our students with every possible description of dental treatment. The Staff of Clinical Instructors is being very materially enlarged, so that our students in the Clinic are assured of intelligent supervision and co-operation. The equipment is modern in every respect.

The Dental Clinic shares with the other departments the advantages of the great Hospital with which it is connected, such as a splendid "X" ray department and a well-managed pathological department.

Dental students, in common with the students in Medicine, have the privilege of the surgical operating amphitheatre, and the Hospital anaesthetists are always available for operations in connection with the oral cavity.

ENTRANCE REQUIREMENTS.

Intending students are reminded that a University degree in Dentistry does not always give a right to practise the profession of Dentistry. It is necessary to comply with the Dental laws of the country or province in which it is proposed to begin practise. Each province in Canada at present has special requirements for its license, and in most provinces a certain standard of general education is insisted upon before beginning the study of Dentistry. *Students who intend practising in Canada are advised to register their qualifications in the Province in which they intend to practise at the beginning of their course in Dentistry.*

Students may qualify for entrance to Dentistry by passing the Matriculation Examination, or by presenting a certificate of registration with a Provincial Dental Council, but those who wish to practise in the Province of Quebec,if they do not hold a degree in Arts from a British or Canadian university, must pass the Matriculation Examination of the College of Dental Surgeons of the Province of Quebec.

The following is a list of the Registrars of the several Canadian Provinces. Students are advised to write for information whenever they are in doubt as to the regulation of any province.

**Ontario.*—W. E. Willmott, Toronto.
**Nova Scotia.*—Geo. K. Thompson, D.D.S., Halifax.
**New Brunswick.*—F. A. Godsoe, D.D.S., St. John.
**Prince Edward Island.*—J. S. Bagnall, D.D.S., Charlottetown.
**Manitoba.*—H. F. Christie, D.D.S., 626 Somerset Block, Winnipeg.
**Alberta.*—H. F. Whittaker, D.D.S., Edmonton.
**Saskatchewan.*—L. J. D. Faskin, Regina.
Quebec.—Albert Delorme, 713 St. Catherine Street East., Montreal.
**British Columbia.*—Albert Brighouse, Vancouver.

DOMINION DENTAL COUNCIL OF CANADA.

Eight of the nine Canadian Provinces, *i.e.*, all but Quebec, have entered into an agreement whereby the holder of a license granted by the Council may practise in any of the subscribing provinces on the following conditions:-

(1) Holding a matriculation certificate of the proper standard.
(2) Passing the examination set by the council.
(3) Paying the local provincial registration fee.

For matriculation, the Council accepts the Junior matriculation of the Province of Ontario or matriculation into the Faculty of Arts of any Canadian university. Secretary, Major W. D. Cowan, M.P., Regina, Sask.

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*Members of the Dominion Dental Council.

REQUIREMENTS FOR THE PRELIMINARY EXAMINATION OF THE COLLEGE OF DENTAL SURGEONS OF THE PROVINCE OF QUEBEC.

To be legally admitted to the study of Dental Surgery in the Province of Quebec, the candidate must:

1. From June, 1921, to June, 1927, (a) present a certificate stating that he has successfully passed the special matriculation examination required by the Board of Governors, and that he is nineteen years of age; or else show that he is a bachelor of arts, letters or sciences (B.A., B.L., B.S.); or (b) hold a matriculation certificate from a recognized university of the Province of Quebec stating that he is regularly admitted to study Dental Surgery therein, because (a) (for the sessions 1921-22 and 1922-23) he has completed five years of classical studies (**Belles-lettres**) for French university college, or four years high school, plus one year college for an English university; (for the sessions 1923-24 and 1924-25) six years of classical studies (**Rhetorique**) in French university college or four years high school, plus two years college in an English university; (for the sessions 1925-26 and 1926-27) seven years of classical studies (**Philosophy Jr.**) or four years high school, plus three years college; (for the session 1927-28), eight years of classical studies (**Philosophy Sr.**) or four years high school, plus four years college; and (b) that he has successfully passed all examinations required at the end of each of the above-menioned periods of study; or that he has made equivalent studies and successfully passed equivalent examinations before the Matriculation Board of the university.

2. After June, 1927, the candidate must: (a) present a certificate stating that he has successfully passed the special matriculation examination prescribed by the Board, and is 19 years of age, or must hold a University diploma of B.A., B.S., or B.L., or (b) hold a certificate from a university of the Province of Quebec stating that he has been regularly admitted to study therein because (a) he has completed eight years of classical studies or four years high school, plus four years college; (b) has successfully passed all required examinations, or (c) has made equivalent studies and has successfully passed examination thereon before the Matriculation Board of the University.

3. In and after 1929 he must hold a bachelor's diploma from a university recognized in good standing by the Board of Governors.

GROUP A.—CLASSICS

Latin.—Cæsar's Commentaries, Books I, II, III; Virgil's Eneid, Books I, II.; questions on grammar and constructions.

English.—Grammar and Analysis; knowledge of one of Shakespeare's plays ("Othello," 1922-1923).

French.—Questions on Grammar and Analysis; translation into English of extracts from Fénelon's "Aventures de Télémaque," Books 1 to 10 inclusive; translation of short English sentences into French.

Literature.—Principles of the subject, with the History of Greek and Roman literature of the classical age, and of English literature from the beginning of the 17th century to the present time.

History.—Outlines of Greek and Roman History with a rather more detailed knowledge of the History of England, France and Canada.

Geography.—Modern, especially of Britain and France, and of their colonies and possessions, especially of Canada.

GROUP B.—SCIENCES

Arithmetic.—To the end of Square Root, and a practical knowledge of the Metrical System.

Algebra.—To simultaneous equations of the first degree, inclusive.

Geometry.—Euclid, Books I, II, III, and the first twenty propositions of Books VI, also the measurement of the surfaces and volumes of the geometrical figures.

Botany.—As in Gray's "How Plants Grow."

Chemistry.—As in Remsen's "Elements of Chemistry."

Philosophy.—Logic, as in Jevons' Logic to page 182. Intellectual and Moral Philosophy, as in Christian Brothers' Philosophy, by L. Poissy.

Physics.—Elementary Statics and Dynamics of Solids and Fluids, with the Chapter on Heat, according to Peck's.

Candidates may take one group at one examination and the other group at the next subsequent examination. If a candidate fails in only one subject, he will have to take over that subject only. In order to pass, the candidate must obtain 60 per cent. in Latin, English, French and Arithmetic, and 50 per cent. in the other subjects. Candidates must produce certificates of good moral character.

The examinations are held at Montreal, on the first Wednesday in April and the second Wednesday in September. Applications are to be made in person to the Secretary, accompanied with the receipt of the Treasurer for the matriculation fee, at least fifteen days before the date of examinanation Fee, $20.00.

For other information, apply to Dr. Albert Delorme, Secretary C.D.S.P.Q., No. 713 St. Catherine Street East.

QUALIFICATIONS FOR THE DEGREE.

1. No one will be admitted to the degree of Doctor of Dental Surgery who shall not have attended lectures for a period of four sessions in this University, or some other university, college or school of dentistry, approved by this University.

2. Students of other universities, so approved, who may be admitted on production of certificates to a like standing in this University shall be required to pass an oral examination in primary subjects, and all examinations in the final subjects in the same manner as students of this University.

3. Candidates for the final examination shall furnish testimonials of attendance on the following branches of dental education; provided, however, that testimonials equivalent to, though not precisely the same as, those stated above, may be presented and accepted.

Biology, General Chemistry, Practical Chemistry, Physics, Histology, Embryology, Anatomy, Practical Anatomy, Physiology, Practical Physiology, Bacteriology, Dental Materia Medica and Therapeutics, Pharmacology, Dental Pathology, Dental Anatomy, Dental Histology, Metallurgy, Dental Surgery, Dental Hygiene, Dental Jurisprudence, Operative Dentistry, Prosthetic Dentistry, Crown and Bridge Work, Orthodontia, Anaesthetics, History and Economics.

No one will be permitted to become a candidate for the degree who has not attended at least one full session at this University.

4. Every candidate for the degree must, on or before the 1st day of May, present to the Dean of the Faculty testimonials of his qualifications, entitling him to an examination, and must at the same time deliver to the Dean of the Faculty an affirmation or affidavit that he has attained the age of twenty-one years.

EXAMINATIONS.*

Frequent oral examinations are held to test the progress of the student, and occasional written examinations are given throughout the session.

The Pass and Honour examinations at the close of each session are arranged as follows:—

First Year.—Examinations in General Biology, Zoology, Anatomy, General and Practical Chemistry, Physics, Dental Anatomy and Prosthetic Dentistry.

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*It should be understood that the programme and regulations regarding courses of study and examinations contained in this calendar hold good for this calendar year only, and that the Faculty of Dentistry, while fully sensible of its obligations towards the students, does not hold itself bound to adhere absolutely, for the whole four years of a student's course, to the conditions here laid down.

SECOND YEAR.—Examinations in Anatomy, Physiology, Histology and Embryology, Pharmacology, Dental Histology and Metallurgy, Operative and Prosthetic Technics, Crown and Bridge Work.

THIRD YEAR.—Examinations (both theoretical and practical) in Bacteriology, Pathology, Operative Dentistry, Prosthetic Dentistry, Crown and Bridge Work, Dental Surgery, Dental Therapeutics, Dental Pathology, Orthodontia and Dental Jurisprudence, Materia Medica, History and Economics.

FOURTH YEAR.—Examinations (both theoretical and practical) in Materia Medica, Operative Dentistry, Orthodontia, Dental Pathology, Prosthetic Dentistry, Dental Surgery, Crown and Bridge Work, Gold Inlay and Condensed Gold, Practical Crown and Bridge Work, Practical Prosthesis, Dental Hygiene, Anaesthetics.

A minumm of 50 per cent. in each subject is required to pass, and 75 per cent. for honours.

All examinations in each year must be passed before a student will be allowed to advance to the next.

Candidates who fail at the regular examinations in not more than three subjects of the First, Second or Third Years may, at the discretion of the Faculty, be allowed to take the supplementary examinations before the beginning of the following session. These examinations will be held during the week preceding the regular opening of the session.

Failure in more than three subjects of the First, Second or Third year at the regular examinations excludes the candidate from advancement.

Students who fail in one subject only of the Final Year may, at the discretion of the Faculty, be allowed a supplementary examination in that subject. Should the subject be one in which practical or clinical work is required, the student must furnish a certificate of additional clinical attendance or laboratory work before presenting himself for examination.

Students who fail at the examination held at Christmas may, at the discretion of the Faculty, be allowed a supplementary examination in that subject at a period not less than three months after the regular examination. Should the subject be one in which practical or clinical work is required, the student must furnish a certificate of additional clinical attendance or laboratory work before presenting himself for examination.

Applications for supplemental examinations must be in the hands of the Dean at least three days before the date set for the beginning of the examination, and they must be accompanied by a fee of $5.00 for each subject.

TEXT-BOOKS.

ANATOMY.—Gray or Cunningham, Morris, Quain, Piersol.
PRACTICAL ANATOMY.—Parsons and Wright, Vol. II.; Cunningham, Vol. III.
PHYSICS.—A. W. Duff.
LABORATORY MANUAL.—First Year Course in Physics; Renouf Pub. Co.
GENERAL CHEMISTRY.—General Chemistry for Colleges, A. Smith.
PHYSIOLOGY.—Haliburton, Howell, Starling, Stewart, Burton, Opitz, Physiology for Dental Students, Pearce McLeod.
PHARMACOLOGY.—Dixon, Cushny.
BACTERIOLOGY.—Muir and Ritchie, McFarland, Park, Connell.
DENTAL ANATOMY.—Black.
PROSTHETIC DENTISTRY.—Wilson.
HISTOLOGY.—Jordan, Noyes, Schafer's "Elements", Bailey.
MATERIA MEDICA AND THERAPEUTICS.—Hare, Gorgas, Buckley, Prinz.
ORAL SURGERY.—Marshall, Blair's Surgery and Diseases of the Mouth and Jaws, Brophy's Oral Surgery.
ORTHODONTIA.—Angle, Pullen, Lischer, Dewey.
CROWN AND BRIDGE WORK.—Goslee, Peeso.
DISEASES AND INJURIES OF THE TEETH.—Smale and Colyer, Pickerill's Prevention of Dental Caries.
PRINCIPLES OF SURGERY.—Senn.
OPERATIVE DENTISTRY.—Johnson, Black.
MICRO-ORGANISMS OF THE HUMAN MOUTH.—Miller.
DENTAL PATHOLOGY AND PHARMACOLOGY.—Burchard and Black.
REGIONAL ANATOMY OF THE HEAD AND NECK.—Eckley.

COURSES OF LECTURES.

BIOLOGY.

The course in Biology for Dental students is conducted, conjointly, by the University Departments of Botany and Zoology. It consists of three parts:—

Part I.

PROFESSOR OF BOTANY:—FRANCIS E. LLOYD.
LECTURER IN BIOLOGY:—GEORGE W. SCARTH.

This part of the course deals with the rationale and simple technique of microscopic vision, including both light and dark field illumination ultramicroscope). Twelve lectures and twelve laboratory periods, three of each per week, during the first month of the session.

Part II.

PROFESSOR OF ZOOLOGY:—ARTHUR WILLEY.
ASST. PROFESSOR:—J. STAFFORD.
LECTURER:—M. NOTKIN.

The course in elementary Zoology is that part of the pre-medical curriculum which introduces the student to some of the terms and principles of animal biology. The manner in which the leading functions of the body are performed in a number of selected types is explained, thereby preparing the mind for the reception of the more advanced instruction in human anatomy and physiology.

Part III.

PROFESSOR OF BOTANY:—FRANCIS E. LLOYD.
LECTURER:—GEORGE W. SCARTH.

This part of the course is a continuation of Part I and runs concurrently with the course in Histology and Embryology. It is designed to present to the student the principles of general biology as illustrated by plants.

CHEMISTRY.

PROFESSOR OF CHEMISTRY:—R. F. RUTTAN.
ASSOCIATE PROFESSOR:—N. N. EVANS.
ASSISTANT PROFESSOR:—W. H. HATCHER.

Instruction in chemistry for students in Dentistry is given during the first year and is identical with the course given to First Year students in Medicine.

During the session the principles governing chemical action are studied in a systematic laboratory course of two periods per week. A printed synopsis of the work of each day is provided and necessary explanations given before beginning the work. The course includes a study of chemical phenomena; the preparation and properties of typical elements and compounds; the laws of chemical action; gravimetric and volumetric determinations, and a short course in qualitative analysis. The student is required to pay special attention to the keeping of an accurate record of his observations and calculations; note-books for this purpose are provided and are examined and criticized by the demonstrators. An examination is held at the end of the session.

During the session, a course of experimental lectures in general chemistry is given; three per week, with frequent reviews and examinations. This course is designed to familiarize the student with the characteristics of chemical action and the conditions which modify it rather than a detailed study of the preparation and properties of the elements and their compounds. An examination is held at the end of the term.

PHYSICS

DIRECTOR OF PHYSICS:—A. S. EVE.
ASST. PROFESSOR:—H. E. REILLEY.
DEMONSTRATORS:—VIOLET HENRY. L. A. SMITH. R. J. CLARK. L. H. NICHOLLS.

First Year.—This course is given in the Physics Building of the University. It consists of three lectures and a laboratory period of three hours per week

The lectures are experimental in character, especially designed to meet the requirements of students in Medicine and Dentistry. The course includes a study of energy, simple machines, properties of matter, fluid pressure, fluid motion, capillary phenomena; production, transmission and interpretation of sound; temperature and temperature measurements, gas laws and kinetic theory, heat capacity, latent heats, laws of vaporization, humidity measurements, heat conduction; elements of magnetism, laws of electrostatics, electrostatic induction and condensers; primary batteries, Ohms' law and its applications, measurements of resistance and electromotive force, measuring instruments, magnetic effects of a current, induced currents, induction coil, conduction through gases, properties of cathode rays and X-rays; radioactive substances and their radiations; laws of reflection and refraction of light, mirrors, lenses and lens combinations, microscopes, telescopes, spectra, spectrum analysis, colour, interference, crystallography, polarized light and saccharimetry.

In the laborarory the student learns the use of such instruments as the balance, vernier, spherometer, hydrometer, hygrometer, spectroscope, saccharimeter, electroscope. Verifications are made of Archimedes' principle, Boyle's law, laws of reflection and refraction, Ohm's law, etc. Measurements are taken of specific gravities, frequencies, specific heats, latent heats, electrical resistance, focal lengths, besides qualitative experiments illustrating the more important physical principles.

ANATOMY.

THE ROBERT REFORD PROFESSOR:—S. E. WHITNALL.
ASSOCIATE PROFESSOR OF HISTOLOGY AND EMBRYOLOGY:—J. C. SIMPSON.
LECTURER IN EMBRYOLOGY:—F. SLATER JACKSON.
LECTURER IN ANATOMY:—I. MACLAREN THOMPSON.
LECTURER IN DENTAL ANATOMY:—H. E. MACDERMOT.
LECTURER IN HISTOLOGY:—W. M. FISK.
SENIOR DEMONSTRATOR (IN CHARGE OF DISSECTING ROOM):—A. D. CAMPBELL.
DEMONSTRATORS OF ANATOMY:—L. H. MCKIM. F. J. TEES. G. A. FLEET. L. L. REFORD. H. B. MALCOLM. A. ROSS. F. N. K. FALLS.

The course covers two years, and is planned so that after making a general survey of the whole body, the dental student concentrates his attention on the head and neck. He is thus enabled to study in greater detail those parts which are related to his particular province, and he avoids spending undue time over regions which possess no special educational or professional value for him. A special Lecturer supervises the work under the direction of the Professor.

First Year. One lecture and one practical demonstration in the dissecting room per week throughout the session. The lectures serve as introductions to the various systems of the body—osseous, muscular, nervous, vascular, digestive, etc. The demonstrations are designed to take the students in small groups over the whole body, illustrating and further explaining the systems noted above. The students can further handle and study for themselves the actual parts displayed.

Second Year:—Two lectures and ten hours dissecting per week throughout the session. The arm is first dissected as an introduction to technique methods and nomenclature. The thorax and abdomen are dissected with a view to understanding the functions of circulation, respiration, digestion, excretion, etc. The head and neck are thoroughly dissected in detail. Osteology classes on the skull with special regional demonstrations are held

and special lectures given on the development of the face, palate and jaws. Dissected brains are demonstrated and studied to understand in particular the origin and connection of the cerebral nerves, the paths of reflex impulses, etc. Finally, demonstrations are given on the organs of special sense.

The work is supplemented by a course on the special anatomy of the teeth, conducted by the Dental Department.

Histology and Embryology.

Second Year:—One lecture and one laboratory period per week throughout the session.

The course includes:

(1) A survey of the general principles of embryology and of the early stages in the development of the human embryo.

(2) A detailed study of the fundamental tissues of the human body.

(3) A study of the development and microscopic structure of the organs and systems, in which the head and neck and the circulatory, digestives and respiratory systems are considered in detail, whilst the remaining systems are treated in a more general way.

PHYSIOLOGY.

THE MORLEY DRAKE PROFESSOR:—JOHN TAIT.
LECTURER:—F. GREEN.
ASSISTANTS:—G. J. CASSIDY. L. NOTKIN.

The purpose of this course is to make the student thoroughly acquainted with modern physiology in its bearing upon the study of Dentistry. A full course of lectures, extending over one session, is given, in which the physical, the chemical, and other aspects of the subject receive attention.

There is also a practical laboratory course of three hours per week throughout the session.

PHARMACOLOGY, MATERIA MEDICA, AND PHARMACY.

PROFESSOR OF PHARMACOLOGY:—H. G. BARBOUR.
PROFESSOR:—ALEX. B. J. MOORE.
DEMONSTRATOR:—W. BOURNE.

Instruction in this branch is given as follows:—

In the Second Year.—Lectures and demonstrations on the physiological action of drugs, especial attention being paid to those employed in dental practice. The physiological action of the general and local anæsthetics is fully described and instruction in their use given in the laboratory. In this year also a course in Materia Medica and Pharmacy is given.

In the Third Year a course in Materia Medica and Pharmacy is given.

This course of about twenty-five lectures and demonstrations covers pharmacognosy, therapeutics and toxicology;

Pharmacopœias—B.P., U.S.P., B.P.C., and various hospital formularies;

Drugs—All organic and inorganic chemicals such as:—alkaloids—glucosides, essential oils, stearoptenes, mineral salts, coal tar and its derivatives, animal products, synthetics, their sources and medicinal properties;

Therapeutical classification of drugs, such as:—anæsthetics, anodynes, antiseptics, caustics, hypnotics, hæmostatics, counter-irritants, etc., etc.;

Toxicology—Toxic doses of potent drugs with chemical and therapeutical antidotes; toxic drugs, their action and administration;

Habit-forming drugs—cocaine, heroin, morphine, etc.;

Posology—

Prescription Writing—Various systems of prescribing symbols, correct abbreviations, incompatibility;

Pharmacy—nomenclature, metrology, specific gravity, percentage solutions, sterilization;

Pharmaceutial Preparations—tinctures, pigments, spirits, collodions, hypodermic injections, mouth washes, dentifrices, fluid extracts, tablets, etc;

Methods of Manufacture—

ORAL SURGERY.

LECTURER:—A. R. PENNOYER.

This will embrace a series of lectures on injuries and diseases of the mouth and jaws and their treatment. The clinics of the Montreal General Hospital afford ample material for students to observe and study disease conditions as well as to witness operations in the mouth.

DENTAL ANATOMY.

LECTURER:—A. CLIFFORD JACK.

This course, given in connection with general anatomy in the First Year, is to give the student a thorough knowledge of the size, shape, uses, and general construction of the natural teeth, their articulation and composition.

This is accomplished by lectures and demonstrations, with the use of drawings, models and lantern slides.

The student is first made to draw, then to model in clay, several teeth chosen by the lecturer. He then carves in ivory sixteen teeth, representing all the forms in the human mouth, which are then articulated anatomically. These are used later on by the student in his work in operative dentistry

Different sections of extracted teeth are made, to familiarize the student with the relationship of the different structures composing the teeth.

The total time given this subject during the First Year is five hours a week for a period of twenty-six weeks, total one hundred and thirty hours, divided as follows:—one hour a week devoted to lectures, twenty-six hours; five hours a week to demonstrating, modelling, carving, making sections, etc., one hundred and thirty hours.

PATHOLOGY AND BACTERIOLOGY.

PROFESSOR OF DENTAL PATHOLOGY:—FRED. G. HENRY.
PROFESSOR OF PATHOLOGY:—HORST OERTEL.
ASST. PROFESSOR OF BACTERIOLOGY:—A. A. BRUERE.
LECTURER IN PATHOLOGY:—C. T. CROWDY.
DEMONSTRATOR IN PATHOLOGY:—J. W. SCOTT.

Dental Pathology.

This course is given to the students of the Third and Fourth Years, and includes a consideration of the various diseases of the enamel, dentine, dental pulp and peridental membrane, their symptomatology and treatment, also a consideration of abnormal conditions of the tissues of the oral cavity with a description of treatment and management of these diseases.

Special attention will also be given to pathological conditions of the nerve structures of the head and their connections with the diseased conditions of the dental tissues.

The mitigation of pain in dental operations receives special attention and the various means employed fully developed and explained, and such directions given as will enable the student to avoid methods and drugs harmful to the tissues.

Bacteriology.

A course of lectures upon bacteriology in relation to disease for students of the Third Year; lectures given three times a week during the autumn term.

A practical course in the bacteriology of infectious diseases for students of the Third Year. Two periods a week during the autumn term.

MATERIA MEDICA AND THERAPEUTICS.

PROFESSOR:—FRED. G. HENRY.

In the Fourth Year a course of demonstrations and lectures in this subject is given, extending throughout the whole session. This comprises the study of the physical properties, chemical composition and physiological action of the various medicinal substances used in the treatment of diseased

conditions of the dental organs and morbid conditions of the oral cavity, together with their various applications, doses, antidotes, and contra-indications, with instruction in prescribing, etc. Anæsthesia and the various anæsthetics are also taken up, following that already given in the Second Year.

CROWN AND BRIDGE WORK.

PROFESSOR:—A. W. THORNTON.

This subject will be taught (as an integral part of Prosthetic Dentistry) by a course of lectures and a series of laboratory demonstrations leading up to the clinical experience given the student in the Dental Clinic.

The general conditions which indicate and the principles which underlie the use of this method in the replacement of lost teeth will be considered, together with the preparation of the natural teeth for the reception of artificial crowns and partial plate attachments.

Concurrently with a description of the various artificial crowns given in the lecture room, the student will be required to construct them in the laboratory under the direction of a demonstrator.

Exhibition work is required in both crown and bridge work, to be placed in the hands of the Professor at the end of the winter term.

ORTHODONTIA.

PROFESSOR:—JAMES B. MORISON.

ASSOCIATE PROFESSOR:—A. W. MCCLELLAND.

The course in this branch will commence with the study of the dental organs during development and eruption.

Special attention will be given to the temporary teeth and the influence they exert in directing the normal occlusion of their permanent successors. The student will be directed to the importance of the study of the etiology of this subject, and its relation to the prevention and treatment of mal-occlusion. Cases deviating from the normal, typical of every variety met with in practice, will be dealt with and a classification made based on the treatment required.

The different methods employed in correcting these conditions will be fully demonstrated, together with the mechanical appliances used.

Ample clinical material is available at the Dental Clinic, where students in the final year will be allotted cases, the treatment of which will be carried on throughout the session.

OPERATIVE DENTISTRY.

PROFESSOR:—F. H. A. BAXTER.

LECTURER:—H. V. DRIVER.

The purpose of this course is to make the students thoroughly familiar with all modern and accepted methods. The course of lectures extends over two years and a half, and includes discussion of the treatment of caries; the preparation of cavities, the materials used for filling, the most approved instruments and appliances used in operating upon the teeth Clinics will be held at the Dental Clinic, where ample material is provided and every available means used to make the student practically conversant with all the up-to-date knowledge on this important branch of dental science.

In conjunction with this course, operative technics is taken up, which provides a systematic course in manual training, thoroughly familiarizing the student with the anatomy of the teeth, and the shaping of cavities, from the simple to the more complex. This is carried out on models, using the different regular filling materials, scaling, bleaching, and so far as possible, all of the operative procedures.

The Dental Clinic is open throughout the whole year, and students are advised to give as long a time to this work as possible. Each student must provide himself with the instruments necessary for his own use, a list of which will be furnished. He is required to perform all the usual dental operations as they present themselves, under the supervision of competent demonstrators, who are always at hand to offer advice and assistance under the direction of the Professor. Between the Second and Third Years, and also between the Third and Fourth Years, students are required to spend two full months doing practical work in the Hospital Clinic.

Porcelain:—This course consists of the study of porcelain in its various uses. It is taught by means of lectures and demonstrations, as well as by practical work by the students themselves, under supervision.

Preparation of cavities for inlays, preparing matrices and the various methods in which porcelain may be employed in crown and bridge work are dwelt upon.

PROSTHETIC DENTISTRY.

PROFESSOR:—GEORGE S. CAMERON.

ASSOCIATE PROFESSOR:—J. S. DOHAN.

The course in prosthetic dentistry will embrace lectures, illustrated by lantern slides, and practical work in the laboratory under the supervision of the demonstrator of technics. It will include the preparation of the mouth

for dentures, impressions, and the properties of materials used in the construction of artificial dentures. The student will be required to construct the different forms commonly used. Attention is directed to the different functions to be performed by the denture in the restoration of the natural conditions as regards mastication, enunciation and the restoring of the features. Fractures of the jaw will be discussed, and the construction of interdental splints, as recommended by the different authorities, is detailed.

PROSTHETIC TREATMENT OF CLEFT PALATE.

LECTURER:—OLIVER MARTIN.

In connection with the Department of Prosthetic Dentistry, a series of lectures and demonstrations will be given on the prosthetic treatment of cleft palate. This very important subject will be thoroughly covered and, when possible, cases will be treated in the Hospital Clinic by the students, under the supervision of the lecturer in the subject.

DENTAL HISTORY, ETHICS AND ECONOMICS.

LECTURER:—F. A. STEVENSON.

History:—

This course is intended to give to the student an intelligent conception of the evolution and development of Dentistry from the primitive conditions and methods of the past to the present standing of the profession as a branch of the healing art. The relation of some of the outstanding men of the profession to this development will also be dealt with.

Ethics:—

Under this head the moral, social and business relationships between the dentist and his patient will be discussed, as well as his duty to the public, his fellow practitioner and himself.

Economics:—

Under this head the business of the dentist's life will be considered. The questions of office equipment, keeping of appointments, overhead charges, methods of determining fees, office assistants, etc., will be taken up.

METALLURGY.

PROFESSOR:—ALFRED STANSFIELD.
LECTURER:—GORDON SPROULE.

This course is given to Dental students of the Second Year by the Metallurgical Department of the University.

It consists of twelve lectures of one hour, and twelve laboratory periods of two and a half hours each.

The lecture course covers:—

(1) Introductory lectures on the physical and chemical properties of metals, especially in relation to their use in dentistry.

(2) Methods of melting, casting and alloying metals in the laboratory.

(3) Methods of extracting metals from their ores.

(4) The nature and preparation of alloys, including amalgams.

(5) The metals used in dentistry (lead, zinc, tin, bismuth, cadmium, antimony, aluminium, copper, silver, gold, platinum, iridium, mercury, iron and steel) are considered separately in regard to their properties, uses in dentistry, and, as far as time allows, extraction from their ores. The separation, purification and alloying of gold, silver and platinum are specially considered.

(6) The manufacture, properties and uses of dental amalgams.

Text-book:—J. D. Hodgen, "Practical Dental Metallurgy."

The laboratory course includes experimental work with the metals: gold, silver, copper, lead, zinc, tin, and aluminium.

The metals are melted, alloyed, cast, hammered, filed, cut, rolled, annealed and tested with acids and other chemicals.

The preparation of pure gold and silver is carried out and the production and testing of dental and other amalgams.

The lectures are given by Dr. A. Stansfield, and the laboratory instruction by Mr. Sproule.

The course is given during the first term of each session.

DENTAL JURISPRUDENCE.

PROFESSOR:—D. D. MACTAGGART.
LECTURER:—W. L. BOND.

In this course the lecturer will discuss the laws governing the practice of Dentistry, their necessity and purpose.

The responsibility of the dentist under the laws of the Province, his position as defendant in suits for damages and as plaintiff in suits for fees, etc., will be fully explained.

CLINICAL INSTRUCTION.

Clinical instruction is given in the Operating Theatre and Out-Patient Department and in the Dental Clinic of the Montreal General Hospital. Abundant opportunity is afforded in this institution for the study of diseased conditions of the mouth and jaws, and for watching operations on these regions. The Dental Clinic, established twelve years ago by the Hospital authorities, proved a success from the outset, and ample material for clinical study is now provided. Fifteen thousand patients were treated at this clinic during the past session.

Students are required to attend the clinic every day during the Third and Fourth Years from nine to twelve o'clock and from one-thirty to five o'clock, except during such part of the time as may be taken up with lectures or other work of the University course. Instruction is given by Professor Thornton, Dental Surgeon in charge, assisted by the Superintendent and a capable staff of demonstrators. Anæsthetics are administered by members of the resident staff of the Hospital, who give practical instruction in this most important branch. A nurse is also in attendance during clinic hours.

LIBRARY.

In conjunction with the Medical Library, which contains all the standard text-books in the branches of the first two years in Dentistry, there is a splendid departmental library dealing exclusively with dental subjects. Students may consult any work of reference in the Library between 9 a.m. and 5 p.m.

MUSEUM.

In connection with the Pathological Museum of the Medical Faculty there is a very good collection of plaster casts of deformities of the jaw, etc., and also a very large collection of teeth of all varieties. During the session the Dental Museum will be available for teaching purposes.

FACULTY OF MUSIC.

ADMISSION.

Students of the Conservatorium will be admitted either as:—

Regular Students, taking an organized course, which includes individual instruction in a First and Second Subject, together with such classes and lectures as may be thought advisable by the Director, leading to the Diploma of Licentiate in Music, or the Degree of Bachelor of Music in the University.

Senior Partial Students, who besides individual instruction in the one principal subject, take two classes. Instrumentalists will, at the discretion of the Director, be assigned to two of the following classes: Theory, Harmony, History, Form and Analysis, Ensemble Playing. Vocalists will be assigned to two of the following classes:—Theory, Sight-Singing, Elocution and Diction, Choral Class.

Junior Partial Students, who, besides individual instruction in their principal study, will attend one lecture class. Lecture Classes will be arranged so as not to interfere with students' school work.

Repertoire Students. Those who are unable for certain reasons to attend lecture classes, or who have been through the lecture courses during previous sessions, and wish to get advanced instruction in their principal study only.

Occasional Students. Those wishing to attend lectures or classes only, in such subjects as the following:—Theory, Harmony and Counterpoint, Composition and Orchestration, History and Aesthetics, Acoustics, Vocal Physiology, Orchestral class, String Ensemble class, Operatic class, Elocution class.

FEES.

The fees will be as follows:—

Regular Students. $175 a year payable at the beginning of the session (not later than October 1st), or in two instalments of $90 each, payable before October 1st and Feb. 1st, respectively. This sum will also cover the fees for Diploma or Degree Examination at the end of the year.

Senior Partial Students. $40 per term of eleven weeks. Students paying in full for the three terms of eleven weeks each, will be allowed to take the examination for a Certificate at the end of the year without any further fee.

Junior Partial Students. $33 per term of eleven weeks. Students paying in full for three terms of eleven weeks each, will be allowed to take the examination for a Certificate at the end of the year without any further fee. No one over the age of 16 years can enroll as a Junior partial student.

Repertoire Students. $60 per term of eleven weeks.

Occasional Students. Fees vary between $15 and $5 per term, according to the class. Precise information can be obtained on this point from the Secretary.

The Fees for examinations for Certificates, when not included in the term fees as above mentioned, will be the same as the fees for the Local Examinations, see p. 25.

In all cases fees must be paid strictly in advance at the office of the Conservatorium.

No individual or class lessons will be given to any student who is unable to produce a card, showing that the necessary fees have been paid.

CONSERVATORIUM REGULATIONS.

1. Fees will not be refunded, nor will the length of the term be extended on account of temporary absence. Absence from lessons caused by prolonged illness may be allowed for, provided the Secretary is notified and a Doctor's certificate presented.

2. No business matters can be arranged through the instructors, but must be transacted through the office.

3. Students cannot register for less than a term and must notify the secretary, at least a week before the end of the term, if they wish to discontinue lessons, otherwise it is understood that lessons will be continued through the following term.

4. Any lessons missed in consequence of the instructor's absence will be made up at the mutual convenience of instructor and pupil. Lessons missed by students will be their loss, unless a Doctor's certificate is produced.

5. An attendance book is kept by each instructor, and the Secretary is notified of any irregularity of attendance or absence of pupils through serious illness.

6. Every partial student must attend at least two-thirds of the lecture classes in each term, or in default be charged the higher fee as a repertoire student.

7. No student suffering from an infectious or contagious disease, or who is, in the opinion of a competent medical attendant, in any way brought into contact with any person infected with such disease, will be admitted.

8. Students are required to be punctual at lessons, lectures, concerts and examinations.

9. Notices on the bulletin boards are official, and students are requested to pay due attention to such as may be posted there.

10. No change in course or teacher can be made without first obtaining the consent of the Director.

11. Students must be prepared for examinations by the instructor to whom they are assigned.

12. Students are not permitted either to take part in any public musical performance, or publish a composition, or accept a professional engagement, without the consent of the Director.

13. The name of each lecturer and the hours at which the classes are held will be posted on the notice boards.

14. None but registered students of the Conservatorium can take part in either recitals or concerts.

15. Visitors will not be allowed to be present during any lesson (class or private) except by permission.

16. The Director has the right either to refuse or to cancel at any time the registration of any individual whose presence in the Conservatorium may appear to be detrimental to its interests.

17. Smoking within the building is absolutely prohibited.

18. On registration all students are requested to pay an additional fee of $4.00, which will entitle them to two admission tickets to the three Orchestral Concerts, Staff Recital, Students Recitals and other events which may from time to time be arranged for their benefit by the Director.

EXAMINATIONS IN MUSIC.

(For Centres with Local Representatives, see separate Bulletin.)

PREFACE.

Recognizing the necessity of helping to raise the standard of musical education in Canada, and at the same time to bring the influence of competent examiners to bear upon instruction, McGill University holds local examinations throughout the Dominion. In view of the fact that it grants Degrees in Music and a Diploma of Licentiate, the University extends its field of work by means of these local examinations, which are preparatory to those for Degrees and Diplomas.

The Examiners are appointed by the Board of Governors of the University, the Chairman of the Examining Board being Dr. Harry Crane Perrin, the Dean of the Faculty of Music and Director of the Conservatorium.

GENERAL REGULATIONS FOR EXAMINATIONS, 1922-1923.

1. All fees must be paid in advance direct to the Secretary of McGill University Conservatorium of Music, 323 Sherbrooke Street West, Montreal, who will supply forms of entry. These can also be obtained from the local representatives or local secretaries. (See pp. 22, 23, 24).

2. A local representative of McGill University will supervise the conduct of the theoretical examinations at each centre. All papers will be sent to McGill University itself, and, in the case of the local examinations, examined by a Board consisting of at least three examiners.

3. Every certificate gained by candidates in any of the public examinations will bear the imprimature of McGill University.

4. The Principal of a school may arrange with the Secretary to send an examiner to report on the musical education gained at the school. No individual certificates will be awarded in this case, but merely a collective detailed report drawn up by the examiner and sent to the Principal of the school.

5. Similar arrangements may be made with regard to Class Singing.

6. In case of a candidate being prevented by serious illness from attending any examination, the Secretary is authorized, on receipt of a medical certificate, which must, however, reach him at least five days before such examination, to transfer a candidate to the next examination without further fee.

7. As an additional assurance of fair treatment of every candidate two examiners will be present at each examination in practical subjects throughout the Dominion, wherever it is at all possible to arrange that such shall be the case. This must necessarily largely depend on the number of candidates presenting themselves for examination.

8. Examinations will be arranged by the Secretary when required, and new centres formed where not less than ten candidates are entered, provided the amount of fees is sufficient to meet the expenses incurred.

ADVICE TO TEACHERS AND CANDIDATES.

1. Candidates are advised not to attempt too high a grade when first entering for the local examinations, which are arranged in a systematic course of progressive grades, beginning with the Lowest or Primary grade and leading on through the Diploma examination for Licentiate of Music to that for the Degree of Mus. Bac.

2. Teachers as well as candidates are urged to regard the particular studies and pieces selected for examination in any one grade as indicating degree of difficulty, and not to confine their attention for a whole year to the preparation of two or three examination pieces.

3. In preparation, teachers and pupils should use the music of the lower grades at the beginning of the winter, and should not begin too early with the actual grade book selected for examination at the end of the session. Lack of interest often ensues from the monotony entailed by candidates concentrating their whole attention on the examination book for too long a period.

4. Books for the last ten years, which contain well-assorted standard studies and pieces, will be found useful by teachers and pupils alike whether for repertoire study, reading at sight, or analysis purposes. Price 50c. per book, obtainable from the general Secretary.

REGULATIONS FOR LOCAL CENTRE EXAMINATIONS FOR CERTIFICATES.

1. Theory examinations will be held throughout the Dominion on May 2nd, 1923. In the case of candidates wishing to take an examination in a practical subject in the same year as the theoretical examination, the result of the latter will be communicated to them at least a week beforehand, so that, if successful in passing, they can proceed to the practical examination; if unsuccessful, they can still proceed to the practical examination, and if they satisfy the examiner or examiners in this, they must present themselves at a supplemental theoretical examination held later in the same year, which, if they pass, entitles them to receive the certificate for the practical examination. A special charge for this Supplemental Examination will be found under fees on page 360. An alternative is provided for unsuccessful candidates in the May theoretical examinations; instead of presenting themselves for the ensuing practical examinations they are either entitled to a refund of the proportion of fee paid for the practical examination, or to present themselves for the practical examination of the same grade the following year.

2. Practical examinations will be held during May and June, 1923.

3. For both theoretical and practical local examinations, forms of application, duly filled up by the candidate, and accompanied by the examination fee, MUST REACH THE GENERAL SECRETARY IN MONTREAL ON OR BEFORE APRIL 14th, 1923.

4. Certificates will be awarded to successful candidates in both theoretical and practical subjects. They will be of two kinds in each grade: (a) Distinction; (b) Pass.

5. These certificates do not entitle the holders to append any letters to their names.

6. The maximum number of marks obtainable in each practical subject is 150, of which 100 entitles to a Pass and 130 to Distinction.

7. The maximum number of marks obtainable in each theoretical paper is 150, of which 100 entitles to a Pass and 130 to Distinction.

8. No special textbooks are prescribed for theoretical examinations, and no particular method or style is specified for practical examinations. No particular edition is prescribed for pieces found in the syllabus, but for the convenience of teachers and candidates the Uni-

versity publishes, in separate books for each grade, the studies and pieces required for the Pianoforte Examinations, which can be obtained direct from the General Secretary or from the various local music warehouses.

9. Candidates presenting a study or piece not prescribed by the current syllabus, run a risk of being disqualified.

10. Candidates entering for practical subjects must, in all grades except the two last (Elementary and Lowest), previously work a theory paper of the preceding lower grade during the same year or the preceding year.

11. Only one candidate at a time is allowed to be in the examination room for practical examinations.

12. The accompanist for all examinations, where one is needed, is allowed to be in the examination room only to accompany the songs and pieces.

13. The examiner's decision is final, and cannot be reconsidered.

14. The possession of certain certificates granted by other institutions may exempt the holder from the necessity of taking the Theoretical part of the Local Examinations. In making application for exemption the holder of such certificate must give explicit information to the General Secretary at least one month before the date of the examination, and be prepared to produce the original certificate if required.

15. The possession of certain certificates gained in the Local Examinations will entitle the holders to claim exemption from certain parts of the examinations for the Diploma of Licentiate in Music, should they at a later date decide to proceed to the higher examinations for that Diploma.

The requirements for the Local Central Examinations are given in detail in the Bulletin of the Conversatorium of Music.

FEES FOR DIPLOMA AND DEGREE EXAMINATIONS.

DIPLOMA OF LICENTIATE (L. Mus.)—Fees for examinations. $45, of which $15 is payable at each examination. Diploma fee, $5.

DEGREE OF BACHELOR OF MUSIC—Matriculation fee, $7. Fees for examinations payable as follows:— First examination in Music, $20. Second examination in Music, $20. Final examination in Music, $20. Graduating fee, $20.

Although under special conditions exemptions from certain examinations for the Diploma of Licentiate and Degree of Bachelor of Music may be allowed, there will be no exemption from the fees given above except in the case of candidates holding McGill Local Centre Certificates.

DEGREE OF DOCTOR OF MUSIC—Fee $100, one-half of which ($50) to be paid when submitting exercise and balance ($50) to be paid before the final examination.

N.B.—Candidates examined in theoretical subjects connected with the above Degrees and Diplomas at centres other than Montreal will probably have to pay a local supervisor's fee in addition to the fees stated above.

FEES FOR LOCAL EXAMINATIONS.

1.—Theory of Music.

	Fee
Highest Grade	$9.00
Senior Grade	5.50
Intermediate Grade	4.00
Junior Grade	3.00
Elementary Grade	2.00

2.—Practical Subjects.

Highest Grade, including fee for Theory work	$12.00
Senior Grade, including fee for Theory work	10.00
Intermediate Grade, including fee for Theory work	7.50
Junior Grade, including fee for Theory work	6.00
Elementary Grade	3.50
Lowest Grade	2.50

3.—Supplementary Theoretical Examinations.

Fee for the three highest grades	$2.00
Fee for the two lowest grades	1 50

4.—General School Examination.

Fee $20.00 for first hour and $10.00 for each succeeding hour. (One examiner.)

5.—Class Singing Examination.

Fee, $10.00 per class. (One examiner.)

PUBLIC EXAMINATION FOR DEGREES AND DIPLOMAS.

DEGREE OF DOCTOR OF MUSIC.

Bachelors of Music of McGill University, after a lapse of a period of five years from the time of taking the Degree of Bachelor of Music, may proceed to the Degree of Doctor of Music, the requirements for which are a composition in extended form, such as an Oratorio, Opera or Cantata! This exercise must have as its first number an introductory orchestra. movement in the form of a Concert Overture, must contain some eight-part writing and fugal treatment, and must be scored for a full orchestra. If preferred, a candidate may present a composition scored for full orchestra in the form of a Symphony, Symphonic Poem or Tone Poem occupying no less than forty minutes in performance. The University may, in it elects to do so, order the candidate to give a public performance of this original and unaided composition, when approved by the examiners, if some public building connected with the University. In addition, an examination in the higher forms of composition shall be necessary, together with a critical knowledge of the full scores of certain prescribed works.

Graduates of other Universities can, on payment of the necessary fees, be admitted "ad eundem" to the Degree of Mus. Bac., if they wish to proceed to the further degree of Mus. Doc., provided they secure permission to do so from the executive of the Faculty of Graduate Studies and Research.

Full particulars can be obtained from the Registrar of the University.

DEGREE OF BACHELOR OF MUSIC.

All candidates for this degree must pass the following examinations:—

1. The Matriculation examination.
*2. The First examination in Music (at the end of the first year).
*3. The Second examination in Music (at the end of the second year).
*4. The Final examination in Music (at the end of the third year).

*A specimen set of papers for each of the three examinations can be obtained from the General Secretary, price 25c. each.

THE MATRICULATION EXAMINATION.

The Matriculation Examination is held yearly, in June and September, at McGill University and at various centres throughout the Dominion. Candidates for musical degrees will be examined in the following:

1. English (two papers).

2. History (one paper).
3. Two out of the following languages:—French, German, Latin, Italian, Spanish (two papers in each of the two languages chosen by the candidate).
4. Arithmetic or Algebra or Geometry (one part).
5. Rudiments of Music (musical intervals, scales, clefs, time signatures, construction of chords, elementary harmony to chord of dominant seventh) (one paper). The paper set will be similar to that for the Senior Grade of the local examinations in Music.

Further information with regard to this examination, and exemption therefrom through the possession of certain equivalent certificates, can be obtained from the Registrar of the University. Before being admitted to Undergraduate courses in Music, candidates must satisfy the Dean of the Faculty of Music that they are sufficiently advanced in their chief and second practical studies.

BACHELOR OF MUSIC.

First Examination in Music.

(a) Advanced Rudiments.
(b) Harmony in three and four parts.
(c) Counterpoint up to three parts.
(d) Form and Analysis. Questions will be given on accent, cadence, metre, rhythm, phrasing, etc., and on form shown in the works of the classic composers.
(e) General outlines of Musical History.
(f) Chief and Second Practical Study. One of these may take the form of the composition of a song or songs, or a miniature suite for a solo instrument or any combination of instruments.

Second Examination in Music.

(a) Harmony in not more than four parts.
(b) Counterpoint in not more than four parts.
(c) Canon in two parts and Fugal Exposition up to four parts.
(d) History of Music from 16th century to present day.
(e) Form and Analysis. The candidate must show an intimate knowledge of a few compositions, the names of which will be supplied to the candidate, on application, at least three months before the date of examination.
(f) Elementary knowledge of Acoustics or Physiology of the Voice.
(g) Chief and Second Practical Study or instead of one of these the composition of:—

(1) A movement in Sonata form for Pianoforte (or Piano and Violin, or any other combination),

or

(2) A choral movement with independent accompaniment,

or

(3) A Suite for Strings.

The possession of the Diploma of Licentiate of Music obtained either under Class I. or Class III. from McGill University exempts candidates from the necessity of taking the First and Second Examinations for Mus. Bac., and, accordingly, candidates can proceed direct to the Final Examination, provided that they have matriculated.

Final Examination in Music.

(a) Harmony up to five parts.
(b) Counterpoint up to five parts.
(c) Double Counterpoint in 8ve, 10th, and 12th.
(d) Canon and Fugue in three and four parts.
(e) History of Music from earliest to present time.
(f) Form and Analysis—knowledge will be required of such works as the following:—Bach's 48 Preludes and Fugues; Beethoven's Pianoforte Sonatas; Schubert's, Schumann's, and Brahms' Songs; Mendelssohn's Psalms and such Oratorios as Elijah and St. Paul, Symphonies and Overtures by Mozart, Beethoven, Brahms, Mendelssohn. Candidates should send in a list of works in which they are prepared to be examined, a few weeks before the date of examination.

(g) Instrumentation—a knowledge of the compass and capabilities of all instruments in the modern orchestra and the scoring of a given passage in a given time; also the reading at sight of a short excerpt from an easy score of an early work by Mozart or Beethoven.

(h) Chief and Second Practical Study or, in lieu of both of these, a composition can be sent in by the candidate containing four-part chorus, a solo or duet, an unaccompanied quartette and a four-part fugue—the whole work (except the quartette) must be scored for stringed instruments in such a way as to show considerable independence between voices and instruments. If preferred, this composition can take the form of a string quartette containing not less than three movements.

REGULATIONS FOR DIPLOMA OF LICENTIATE OF MUSIC.

Full particulars are given in the Bulletin of the Conservatorium of Music.

THE FACULTY OF GRADUATE STUDIES AND RESEARCH.

The Faculty of Graduate Studies and Research directs and controls all the courses leading to the higher degrees and recommends candidates for these degrees.

The members of the Faculty are the heads of departments and certain others on the staff of the University who offer and give *bona fide* courses of instruction of a graduate character and who superintend research work for the higher degrees. The members are appointed by the Board of Governors on the recommendation of the Principal. Other members of the staff, not members of the Faculty, who give graduate work of an approved character, have the rank of Associates of the Faculty.

The functions of the Faculty are *inter alia* —

(1) To approve of the courses submitted by the heads of departments giving graduate instruction.

(2) To determine the conditions under which students may become candidates for higher degrees.

(3) To conduct examinations for such degrees.

The routine executive work of the Faculty, such as the admission and registration of students, the determination of the courses which they must take, the approval of the students' fulfilment of the requirements and the arrangements for the examinations are in charge of an Executive Committee appointed by the Faculty, which at stated intervals shall report its proceedings to the Faculty as a whole.

DEGREE OF MASTER OF ARTS (M.A.).

Instruction in the Faculty of Graduate Studies and Research leading to the degree of Master of Arts is provided in the following departments of study which rank as "Subjects":—

Philosophy, including Psychology.
History.
Economics and Political Science.
Greek Language and Literature.
Latin Language and Literature.
French Language and Literature.
English Language and Literature.
Oriental Languages.
Constitutional Law.
Mathematics.

The requirements for the degree are as follows:—

(1) Candidates must hold the degree of B.A. or B.Sc. (in Arts) from McGill University, or its equivalent.

(2) Candidates must take one year of resident graduate study at McGill University.

(3) One or two subjects may be taken.

(4) When two subjects are taken one of them shall be designated as the major subject and special attention shall be paid to it. It must be a subject which the candidate has already studied in his undergraduate course, and the work required in it will represent an attainment in knowledge far in advance of that required for the B.A. degree. The minor subject, if taken, must be a cognate subject and be approved by the head of the major department. Not more than one-third of the candidate's time for the year shall be devoted to the minor. The candidate shall pass an examination in each of the subjects in his course.

(5) The candidate shall also present a thesis on some topic connected with his major subject. The title of his thesis must have been previously submitted to the head of the department concerned and to the Faculty of Graduate Studies and Research for their approval. The thesis must be in some measure a contribution to knowledge and must also be in good literary style.

(6) The first year's course of study for the Ph.D. degree will cover the requirements of the M.A. course; but if such a course of study be followed, a thesis must be submitted and approved before the degree of M.A. is conferred. If, however, the candidate continues his course of study and takes the degree of Ph.D., the degree of M.A. will be conferred with the degree of Ph.D., and in this case no special thesis will be required for the former.

DEGREE OF MASTER OF LAWS (LL.M.).

Instruction in the Faculty of Graduate Studies and Research leading to the degree of Master of Laws is provided in the following departments of study which rank as "Subjects":—

Civil Law.
Common Law.
Commercial Law.
Constitutional and Public Law.
Roman Law.

The requirements for this degree are as follows:—

(1) Candidates must hold the degree of B.C.L. or LL.B. from McGill University, or its equivalent, or be graduates of an approved law school.

(2) They must pursue one year of resident graduate study at McGill University.

(3) They shall also present a thesis on some subject previously approved by the head of the department concerned and the Faculty of Graduate Studies and Research. The thesis must be in some measure a contribution to knowledge and must also be written in good literary style.

DEGREE OF MASTER OF SCIENCE (M.SC.).

Instruction in the Faculty of Graduate Studies and Research leading to the degree of Master of Science is provided in the following departments of study which rank as "Subjects":—

Mathematics.
Physics.
Chemistry.
Biochemistry.
Botany.
Zoology.
Entomology.
Anatomy.
Pathology.
Bacteriology.
Physiology.
Pharmacology.
Geology and Mineralogy.
Thermodynamics and Theory of Heat Engines.
Theory of Elasticity, Strength of Materials and Theory of Structures.
Hydrodynamics and Hydraulics.
Applied Electricity.

Theory of Machines and Machine Design.
Metallurgy.
Mining.
Engineering Physics.
Geodesy.
Ore Dressing.

The requirements for the degree are as follows:—

(1) Candidates must hold the degree of B.A. or B.Sc. from McGill University, or its equivalent.

(2) Candidates must take one year of resident graduate study at McGill University.

(3) The course of study followed by the candidate shall be of an advanced character, being the equivalent of that required for the degree of M.A., and shall lie in the domain of pure or applied science. It may be selected from any one or (at the discretion of the head of the department in which the major subject is) two subjects included in the list given above. This course of study, which must be of a comprehensive character, must have been previously submitted to the head of the department and to the Faculty of Graduate Studies and Research and have received their approval.

(4) The candidate shall also present a thesis on some subject connected with his course of study. The title of the thesis must have been previously submitted to the head of the department and to the Faculty of Graduate Studies and Research and have received their approval. The thesis must be in some measure a contribution to knowledge and must also be written in good literary style.

DEGREE OF MASTER OF SCIENCE IN AGRICULTURE (M.S.A.).

The requirements for the degree are as follows:—

(1) Candidates must hold the degree of B.S.A. from McGill University or its equivalent.

(2) Candidates must take one year of resident graduate study at Macdonald College, Faculty of Agriculture, McGill University.

(3) One or two subjects may be taken.

(4) When two subjects are taken, one of them shall be designated as the major subject and special attention shall be paid to it. It must be a subject which the candidate has already studied in his undergraduate course, and the work required in it will represent an attainment in knowledge far in advance of that required for the B.S.A. degree. Not more than one-third of the candidate's time for the year shall be devoted to the minor subject. The candidate shall pass an examination in each of the subjects of his course.

(5) The candidate shall also present a thesis on some topic connected with his major subject. The title of his thesis must have been previously submitted to the Faculty of Graduate Studies and Research and the head of the department concerned for their approval. The thesis must be a contribution to knowledge and must also be written in good literary style.

(6) Candidates for the M.S.A. degree who select agronomy may register in September or January. In the latter case they will be expected to remain in residence until the end of September. This gives an opportunity for practical field, laboratory and thesis work during the crop-growing season.

DEGREE OF DOCTOR OF PHILOSOPHY (PH.D.).

(1) Candidates for the degree of Doctor of Philosophy must hold the degree of B.A. or B.Sc. or M.D. from McGill University, or its equivalent.

2) They must follow a course of at least three years resident graduate. study. Of these at least one must be at McGill University. The other two may be spent at institutions approved by the Faculty of Graduate Studies.

(3) They must select one major subject and one or two minor subjects. The minor subjects or subject must be cognate to the major subject and must be approved by the head of the department in which the major is. Not more than one-quarter of their time shall be devoted to the minor subjects.

(4) Before the termination of the second year every candidate must satisfy the Faculty of Graduate Studies and Research that he has a reading knowledge of both French and German.

(5) The examination on the major subject shall cover not merely the formal courses of instruction which have been taken, but the candidate must show that he possesses a good general knowledge of the whole science or branch of learning which he has selected as his major subject. A similar general, though less detailed, knowledge shall be required in the case of the minor subjects.

(6) The candidate must also prepare a thesis which shall display original scholarship and be a distinct contribution to knowledge. The subject must be approved by the head of the major department at least twelve months before the date of the final examination.

One week before the Convocation at which the degree is to be conferred, a type-written copy of the thesis, accompanied by a statement from the head of the department that the copy in the form submitted has been accepted, shall be filed in the office of the Dean of the Faculty of Graduate Studies and Research. This copy must be left there till one hundred printed copies have been deposited in the Library.

The candidate shall deliver to the Dean of the Faculty of Graduate Studies and Research a legal contract that he will furnish the Library with one hundred printed copies by a specified date. The publication furnished by him must be a separate print, containing only the thesis. Its size, cover, and title page must conform to the requirements given on pages 15-16.

Upon recommendation of a department and the approval of the Faculty of Graduate Studies and Research a briefer form of the thesis than that approved for the degree may be accepted in fulfilment of the publication requirement. This shall contain an account of the method followed in the investigation, an abstract of the evidence adduced and a full summary of the results obtained. Those who adopt this plan must, in addition to the hundred printed copies of the short form of the thesis, deposit in the Library two type-written copies of the complete thesis.

Courses leading to the degree of Doctor of Philosophy are offered in the following departments:—

Botany.
Biochemistry.
Chemistry.
Geology and Mineralogy.
Bacteriology.
Physics.
Physiology.
Oriental Languages.

In special cases heads of departments may be able to provide courses in other subjects which will lead to this degree. Candidates, therefore, desiring to proceed to the degree of Doctor of Philosophy in other departments than those mentioned above should make direct application to the Faculty of Graduate Studies and Research, asking whether courses in such subjects can be provided.

DEGREE OF DOCTOR OF LITERATURE (D.LITT.).

Masters of Arts of McGill University who are graduates of at least five years standing, and who have distinguished themselves by special research and learning in the domain of arts and literature, may submit their published works to the Faculty of Graduate Studies and apply for the degree of Doctor of Literature. A very high standard is required for this degree, but it does not call for any resident graduate study at the University. Graduates of other universities are not eligible for this degree.

DEGREE OF DOCTOR OF CIVIL LAW (D.C.L.).

Any person who has graduated as B.C.L. or as LL.M. from McGill University may after five years from such graduation proceed to the degree of Doctor of Civil Law, provided he has distinguished himself by eminent

services in the domain of law, and provided he has written a thesis on a subject previously approved by the Faculty of Graduate Studies and Research, and that such thesis has been adjudged by that Faculty to be a valuable contribution to legal science. The candidate may, instead of a thesis, submit a published book or books dealing in a scientific way with some branch or branches of law.

DEGREE OF DOCTOR OF SCIENCE (D.SC.).

Masters of Arts, Masters of Science or Doctors of Medicine of McGill University, who are graduates in one or other of these Faculties of at least five years standing, and who have distinguished themselves by special research and learning in the domain of science, may submit their published works to the Faculty of Graduate Studies and apply for the degree of Doctor of Science. A very high standard is required for this degree, but it does not call for any resident graduate study at the University. Graduates of other universities are not eligible for this degree.

DEGREE OF DOCTOR OF MUSIC (MUS. DOC.).

Bachelors of Music of McGill University, after the lapse of a period of five years from the time of taking that degree, may proceed to the degree of Doctor of Music, the requirement for which is a composition in extended form, such as an oratorio, opera or cantata. This exercise must have as its first number an introductory orchestral movement in the usual concert overture form, and must contain eight-part writing and fugal treatment. It must be scored for a full orchestra. If preferred, a candidate may present a composition scored for orchestra in the form of a symphony, symphonic poem or tone poem occupying no less than forty minutes in performance. In addition, an examination in the higher forms of composition shall be necessary, together with a critical knowledge of the full scores of certain prescribed works. This degree is open only to graduates of the Faculty of Music of McGill University.

THESIS SPECIFICATIONS.

Owing to the fact that all theses submitted by successful candidates for higher degrees will be bound and placed in the Library, candidates for such degrees are advised that the Faculty of Graduate Studies and Research will henceforth require these to be prepared in a uniform manner and in accordance with the following specifications:—

(1) The paper is to be of uniform size, 8½ x 11 inches, and of substantial quality.

(2) The left-hand margin is to have a uniform width of about 1½ inches. Drawings larger than the prescribed page should be folded in the manner most suitable for binding.

(3) All theses must be type-written and in duplicate.

(4) No binding is to be employed, but the loose sheets must be placed in a manilla envelope in the order of their pagination.

All theses must be in the hands of the Dean of the Faculty of Graduate Studies and Research on or before April 1st of the year in which the candidate wishes to present himself for the degree, except in the case of theses involving experimental work, when the time will be extended to May 20th. No theses received after these dates will be accepted.

In the case of candidates presenting themselves for the degree of Doctor of Science, Doctor of Literature or Doctor of Civil Law, two copies of the book or books—or for the degree of Doctor of Civil Law, should a thesis be substituted, two type-written copies of the thesis—must be submitted to the Dean of the Faculty of Graduate Studies and Research not later than February 1st of the year in which the candidate desires to take the degree.

REGISTRATION.

Except for the degrees of Doctor of Science, Doctor of Literature and Doctor of Civil Law, application forms, with an outline of the course of study to be followed, must be filed with the Dean of the Faculty of Graduate Studies and Research for the approval of the Faculty before the 10th of October each year.

Candidates whose course extends over more than one year must register at the commencement of each year of their course.

Application forms and registration cards may be obtained from the Dean.

FEES

For the course leading to the degree of M.A., LL.M., M.Sc. or M.S.A.	$40.00
For each year of the course leading to the degree of Ph.D.	40.00
Graduation fee for M.A., LL.M., M.Sc., or M.S.A.	20.00
Graduation fee for M.A., LL.M., M.Sc., or M.S.A.(in absentia)	40.00
Graduation fee for Ph.D.	30.00
Fee for the degree of D.Litt.	80.00
Fee for the degree of D.C.L.	80.00
Fee for the degree of D.Sc.	80.00

The examination and graduation fee is payable when the candidate presents himself for examination and is not returnable if he is unsuccessful. No thesis can be accepted unless it is accompanied by a receipt from the Bursar for this fee. If, however, a candidate for the degree of M.A., M.Sc., or M.S.A. fails, he may present himself for the examination in a subsequent year without further payment of fees. A candidate for the degree of Ph.D., D.Sc. or D.Litt., in case of failure, may present himself in a subsequent year upon payment of an additional sum amounting to one half of the usual fee for this degree.

Lecturers, tutors and demonstrators in the University who are proceeding to the degree of Master of Arts, Master of Science, Master of Science in Agriculture or Doctor of Philosophy, shall, so long as they remain members of the teaching staff, be exempt from the tuition fee but will be required to pay laboratory and registration fees and the fee for graduation in every case. In the event of their leaving the staff after one year of the course, they are required to pay a tuition fee of $20.00 in the M.A., M.Sc. or M.S.A. course and the prescribed fee in the Ph.D. course.

There is no fee for the degree of LL.D., granted *honoris causa*.

Examination and graduation fee for Mus. Doc. $100.00

The fee for the degree of Mus. Doc. is payable in two instalments. Fifty dollars must be paid when the candidate submits his exercise. If the exercise is not approved, he may in a subsequent year submit another exercise upon payment of $25.00. The second instalment of $50.00 must be paid before the subsequent examination. If the candidate be unsuccessful, he may in a subsequent year present himself again for examination upon payment of $25.00.

DEPARTMENT OF CLASSICS.

MEMBER OF THE FACULTY OF GRADUATE STUDIES.

GORDON J. LAING:—*Professor of Classics.*

ASSOCIATE OF THE FACULTY

SAMUEL B. SLACK:—*Professor of Greek.*

COURSES FOR THE DEGREE OF MASTER OF ARTS

Greek 12: Thucydides; Plato, Republic; Theocritus. With additional readings to be assigned by the instructor. Tu., Th., Sat., at 11..... Professor Slack.

Latin 12: Livy I, II; Lectures on the History of the Monarchy and the Republic; Tacitus, Annals I, II; Lectures on the History of the Empire. With additional readings assigned by the instructor. Mon., Wed., Fri. at 12.....Assistant Professor Thompson,

Latin 21: Roman Inscriptions. Hour to be arranged ....Professor Laing.

DEPARTMENT OF ENGLISH.

MEMBER OF THE FACULTY OF GRADUATE STUDIES.

PAUL T. LAFLEUR:—*Professor of English and Comparative Literature.*

ASSOCIATES OF THE FACULTY

CYRUS MACMILLAN:—*Associate Professor.*
GEORGE W. LATHAM:—*Associate Professor.*

COURSES FOR THE DEGREE OF MASTER OF ARTS

Any course from 5 to 19 inclusive (see pages 142 to 145), if not already taken.

20. **Anglo-Saxon: Beowulf.** 3 hrs.....Associate Professor Latham.

21. **The English and Scottish Popular Ballads:** with some attention to Canadian folk-tales and their relation to those of Europe. 3 hrs....
Associate Professor Macmillan.

22. **Comparative Literature: Epistolary Literature.** 3 hrs.....
Professor Lafleur.

23. **Comparative Literature: Memoirs and Memoir-Writers, beginning with Philippe de Commines.** 3 hrs.....Professor Lafleur.

24. **Chaucer.** Prerequisite: Course 15. 3 hrs....
Associate Professor Latham.

25. **The Drama in England from 1660 to 1920.** 3 hrs....
Associate Professor Macmillan.

Candidates for the degree of Master of Arts in English must take twelve hours of lectures a week, six of which must be selected from Courses 20 to 25 inclusive. Course 13 or its equivalent is compulsory.

Candidates for the Master's degree with English as a minor subject must take three hours of lectures a week, exclusive of Courses 1 to 4.

DEPARTMENT OF MODERN LANGUAGES.

ASSOCIATE OF THE FACULTY OF GRADUATE STUDIES.

RENÉ DU ROURE:—*Associate Professor of French.*

COURSES FOR THE DEGREE OF MASTER OF ARTS IN FRENCH

1. **Comparative Literature** (Department of English, Course 18), 3 hrs.....Professor Lafleur.

2. **Versification: histoire et technique.** 1 hr.

3. **Histoire de la langue française depuis le XVIe siècle.** 1 hr.

4. **Histoire de la comédie en France.** 2 hrs.

5. **Exercices pratiques.** 1 hr.

Candidates for the Master's degree in French only will take all the courses mentioned above and also one of 7, 8, 9 (see Bulletin of the Faculty of Arts).

Those taking French as a major will omit 1 and either 2 or 3.

Those taking French as a minor will take 4 and one of the one-hour courses.

Those who have not taken French Philology in their undergraduate course must take it as a part of their M.A. course, except when French is taken as a minor.

DEPARTMENT OF ORIENTAL LANGUAGES AND LITERATURE.
MEMBER OF THE FACULTY OF GRADUATE STUDIES.

C. A. BRODIE BROCKWELL:—*Professor of Hebrew and Semitic Langugaes, Law and History.*

ASSOCIATES OF THE FACULTY.

ALEXANDER R. GORDON:—*Professor of Hebrew.*

GEORGE ABBOTT-SMITH:—*Assistant Professor of Jewish Hellenistic Literature.*

COURSES FOR THE DEGREE OF MASTER OF ARTS

1. **Special Texts:** connected with Hebrew, or Aramaic, or Syriac, or Phoenician and Punic, or Arabic, or Ethiopic, according to the nature of the thesis. 3 hrs.....Professor Gordon, Assistant Professor Abbott-Smith, or Mr. Graham.
2. **Synopsis of Semitic History.** 1 hr.....Professor Gordon.
3. **Semitic Comparative Philology.** 1 hr.....Professor Brockwell.
4. **Semitic Epigraphy:** including a knowledge of the history of the Semitic alphabet. 1 hr.....Professor Brockwell.
5. **Hebrew and Semitic Social Customs, Institutions and Codes:** 1 hr. Professor Brockwell.
6. **Hebrew and Semitic Modes of Numerical Denotation.** 1 hr. Professor Brockwell.
7. **The Early Hebrew and Semitic Science and Art of Mensuration:** with special reference to the measurement of time. 1 hr..... Professor Brockwell.
8. **Non-Religious Contributions of Semitic Civilization to the Civilization of the West.** 1 hr.....Professor Brockwell.
9. **Hellenistic Grammar, Syntax and Lexicography.** 1 hr.... Assistant Professor Abbott-Smith.
10. **The Critical Use and Values of Hellenistic Documents.** 1 hr.. Assistant Professor Abbott-Smith.

Candidates for the degree of Doctor of Philosophy may arrange with the head of the department for a continuation of the course given above during a period of two years.

DEPARTMENT OF ECONOMICS AND POLITICAL SCIENCE
MEMBER OF THE FACULTY OF GRADUATE STUDIES.

STEPHEN LEACOCK:—*Professor of Political Economy.*

ASSOCIATE OF THE FACULTY

JOSEPH CLARENCE HEMMEON:—*Associate Professor of Economics and Political Science.*

THE DEGREE OF MASTER OF ARTS.

Candidates taking Economics and Political Science as their major subject must have attained honour standing in the department at the examination for the B.A. degree, or have qualifications considered by the department to be equivalent to this.

Candidates who propose to take Economics and Political Science as their minor subject must (a) have taken as undergraduates Courses Nos. 1, 2, 3, (see page 138) and two other full courses and have attained in the work a standing satisfactory to the department, or (b) have done work in another university recognized by the department as the equivalent of this.

COURSES

Any course from 3 to 9 inclusive (see page 138), if not already taken.

10. The Government of Canada. 1st term; Mon., Wed., Fri., at 3. Professor Leacock.

11. Canada: Industrial and Economic Problems. 2nd term; Tu., Th., Sat., at 11.....Associate Professor Hemmeon.

14. Public Finance. 1st term; Tu., Th., Sat., at 12.... Associate Professor Hemmeon.

15. Economic Factors in the Evolution of Society. 2nd term; Tu., Th., Sat., at 12.....Associate Professor Hemmeon.

17. Graduate Seminar: Statistics, Scientific Journals and Conferences on thesis work. Fri., at 5.....Professor Leacock, Associate Professor Hemmeon and Assistant Professor Sandwell.

DEPARTMENT OF HISTORY.

MEMBERS OF THE FACULTY OF GRADUATE STUDIES.

BASIL WILLIAMS:—*Professor of History.*
CHARLES EDMUND FRYER:—*Professor of History.*

ASSOCIATE OF THE FACULTY.

W. T. WAUGH:—*Associate Professor of History.*

COURSES FOR THE DEGREE OF MASTER OF ARTS

5. Mediæval and Renaissance History....Associate Professor Waugh.

6. English Constitutional History.....Associate Professor Waugh.

7. European History, 1603-1784.....Professor Williams.

8. European History, 1784-today.....Professor Fryer.

10. Industrial Democracy in England since 1784.....Professor Fryer.

11. Historical Method and Criticism.....Professor Williams

DEPARTMENT OF PHILOSOPHY

MEMBER OF THE FACULTY OF GRADUATE STUDIES.

WILLIAM CALDWELL:—*Professor of Moral Philosophy.*

ASSOCIATES OF THE FACULTY.

J. W. A. HICKSON:—*Associate Professor of Logic and Metaphysics.*
WILLIAM D. TAIT:—*Associate Professor of Psychology and Director of the Psychological Laboratory.*

COURSES FOR THE DEGREE OF MASTER OF ARTS

20. **Psychological Laboratory;** Experimental Investigations in Human Psychology ..... Associate Professor Tait.
21. **Seminary in Psychology:** Psychology of Religion.... Associate Professor Tait.
22. **Philosophical Seminary:** Idealism, Materialism and Realism; Lectures, papers and discussions....Associate Professor Hickson.

DEPARTMENT OF MATHEMATICS.

MEMBER OF THE FACULTY OF GRADUATE STUDIES.

JAMES HARKNESS:—*Professor of Pure Mathematics.*

ASSOCIATES OF THE FACULTY.

DANIEL A. MURRAY:—*Professor of Applied Mathematics.*
ALBERT H. S. GILLSON:—*Associate Professor.*
CHARLES T. SULLIVAN:—*Associate Professor.*

COURSES FOR THE MASTER'S DEGREE

1. **General Analysis.** 3 hrs.....Professor Harkness.
2. **Introduction to the Theory of Functions of a Complex Variable** 2 hrs.... Associate Professor Gillson.
3. **Introduction to the Theory of Higher Plane Curves.** 1 hr.... Associate Professor Gillson.
4. **Selected Topics in the Theory of Functions.** 3 hrs.... Professor Harkness.
5. **The Differential Equations of Mathematical Physics.** 3 hrs. Associate Professor Gillson.
6. **Differential Geometry.** 3 hrs.....Associate Professor Sullivan.
7. **Projective Geometry.** 3 hrs.....Assistant Professor Matthews.
8. **Differential Equations and Advanced Calculus.** 2 hrs.... Professor Murray.
9. **Harmonic Analysis.** 2 hrs.....Associate Professor Sullivan.

Courses 8 and 9 are intended specially for graduates in the Faculty of Applied Science who are proceeding to the M.Sc. degree in courses in Applied Science; e.g., in Electrical Engineering, or in Civil Engineering. They will

be minors among the courses taken by candidates for this M.Sc. degree, and are based necessarily on the mathematics taken in preparation for the B.Sc. degree in Applied Science. They are, however, open to students other than in Applied Science.

LAW.

MEMBERS OF THE FACULTY OF GRADUATE STUDIES.

HERBERT ARTHUR SMITH: *Professor of Jurisprudence and Common Law.*

IRA ALLAN MACKAY:—*Professor of Constitutional Law.*

COURSES FOR THE DEGREE OF MASTER OF LAWS

1. Constitutional Law of Canada: Constitutional relations between the United Kingdom and Canada; the Crown; Colonial Laws Validity Act, 1865; applicability of English law to colonial conditions; the Quebec Act, 1774; the Judicial Committee; the British North America Act, 1867, and its framework. The greater part of the course will be devoted to an analysis of cases decided under ss. 91-92 of the B.N.A. Act. ....Professor Mackay.

2. Public International Law: Nationality and allied problems; marginal seas, inlets and river systems; vessels; diplomatic agencies, methods, and practice; the laws of war, contraband, continuous voyages, blockade, etc.; the Monroe Doctrine; the Hague Conventions; the Treaty of Versailles, the League of Nations and the International Court of Justice. Selected sources and cases.....Professor Mackay.

3. The Law of Trusts (Common Law): The theory of the trust: early history of trusts and uses; the statute of uses; subsequent developments of the law of trusts; the modern law; comparison of Roman and common law principles. Selected cases and statutes.....Professor Smith

4. The Law of Wills (Common Law): Origin and history of the English will; comparison with the development of the Roman will; formal requirements; principles of interpretation: duties of executors and administrators; testamentary capacity; restrictions on the right of testation. Selected cases and statutes.....Professor Smith.

DEPARTMENT OF PHYSICS

MEMBERS OF THE FACULTY OF GRADUATE STUDIES.

ARTHUR STEWART EVE:—*Professor of Physics and Director of the Physics Building.*

LOUIS V. KING:—*Professor of Physics.*

ASSOCIATES OF THE FACULTY.

JOSEPH A. GRAY:—*Associate Professor of Physics.*

A. NORMAN SHAW:—*Associate Professor of Physics.*

COURSES FOR THE DEGREE OF MASTER OF SCIENCE

10. **Vector Analysis.** 2 hrs., 1st term.....Professor Eve.
11. **Advanced Statics, Dynamics, Hydrodynamics and Sound.** 2 hrs. Professor King.
13. **Quantum Theory and Relativity.** 1 hr.....Professor Eve.
14. **Advanced Electricity and Magnetism.** 2 hrs.....Professor King.

Also Colloquia; Physical Society; special books.

COURSES FOR THE DEGREE OF DOCTOR OF PHILOSOPHY

13 and 14 as above.

15. **Advanced Statics, Dynamics, Hydrodynamics and Sound.** 2 hrs. Professor King.
16. **Kinetic Theory of Matter, and Electron Theory.** 2 hrs..... Professor King.
17. **Quantum Theory and Relativity.** 1 hr.....Professor Eve.
18. **Advanced Electricity and Magnetism.** 2 hrs....Professor King.

Also Colloquia; Physical Society; set books.

Candidates taking Physics as a minor course for the Ph.D. may select courses from 10 to 18 inclusive. There will be a test paper on Physics and set books.

DEPARTMENT OF CHEMISTRY.

MEMBER OF THE FACULTY OF GRADUATE STUDIES.

ROBERT F. RUTTAN:— *Professor of Chemistry and Director of the Chemistry Building.*

ASSOCIATES OF THE FACULTY.

FREDERICK M. G. JOHNSON:—*Professor of Inorganic Chemistry.*
OTTO MAASS:—*Associate Professor of Chemistry.*
GEORGE S. WHITBY:—*Associate Professor of Chemistry.*

COURSES FOR THE DEGREE OF MASTER OF SCIENCE

1. **Advanced courses in** (a) **Inorganic,** (b) **Organic,** (c) **Physical** and (d) **Colloidal Chemistry.**

One or more of these courses are open to our students and chemical engineers. The subject matter of these should be covered on entrance to the Faculty, but few undergraduates take all these, and candidates in the Faculty of Graduate Studies and Research are allowed to carry two.

2. **Colloquium,** one per week. Each candidate gives one, and, if time permits, two papers on some recent advances in chemistry. Papers are suggested and criticized by some member of the senior staff.

3. Attendance at the weekly meetings of the Chemical and Physical Societies.

4. Special graduate lectures, about forty in number, divided among the members of the senior staff.

5. Supervision of special reading and regular conferences of each student with some member of the senior staff.

6. Assistance and instruction regarding the technique and literature of the Master's thesis.

COURSES FOR THE DEGREE OF DOCTOR OF PHILOSOPHY

1. Advanced courses to undergraduates and graduates, see (1) above, taking up different fields of chemistry each year. If the subject matter of a course be new to a graduate student, he takes this course.

2. Colloquium: for each of the three years, as above (2).

3. Attendance at Chemical and Physical Societies: each candidate is required to give one lecture during his course.

4. The graduate lectures, (4) above, are not on the same subjects two years in succession. They are attended for three years.

5. Supervision of reading and regular conferences, as in (5) above.

6. Supervision and direction of research work by the member of the senior staff under whom the candidate is working. If the candidate is unable to suggest an acceptable piece of work, a special problem is assigned to him.

DEPARTMENT OF BIOCHEMISTRY.

MEMBER OF THE FACULTY OF GRADUATE STUDIES.

ARCHIBALD BYRON MACALLUM:—*Professor of Biochemistry.*

COURSES FOR THE DEGREE OF MASTER OF SCIENCE

Advanced lectures and laboratory work on the following:—

1. **General Biochemistry.**
2. **The Chemistry of Animal Metabolism.**

These courses will involve about sixty lectures and about two hundred hours of laboratory work, the latter in addition to the research for the preparation of the dissertation for the degree.

Candidates who desire to proceed to the M.Sc. degree in biochemistry must have a good knowledge of chemistry (inorganic, organic and physical) and must have taken (or must take concurrently with the work for this degree) all the undergraduate work in biochemistry.

COURSES FOR THE DEGREE OF DOCTOR OF PHILOSOPHY

The courses offered by the department, covering what will be required for biochemistry as a major subject for the degree, will involve the extension of those listed above and also the following:—

1. **Organic Colloids in their Chemical and Physical Relations.**
2. **Laboratory Methods of Synthesis of a Number of Bio-organic Compounds.**

3. **Problems of Biophysics.**

4. **Methods and Results in the Microchemistry of the Animal and Vegetable Cell.**

These courses will involve about eighty lectures, to be given in the two later of the three years required for the degree. The candidate must attend and participate in the colloquia held fortnightly for graduate students in the department.

The requirements for registration for the degree of Ph.D. with Biochemistry as the major subject are the same as those for the M.Sc. degree.

DEPARTMENT OF BOTANY.

MEMBER OF THE FACULTY OF GRADUATE STUDIES.

FRANCIS E. LLOYD:—*Professor of Botany.*

ASSOCIATE OF THE FACULTY

CARRIE M. DERICK:—*Professor of Morphological Botany.*

Candidates taking major work in botany should, except for special reasons, take chemistry or physics as a minor. For genetics statistical methods are required.

Attendance at bi-weekly colloquia is required of all candidates for higher degrees. Presentation by candidates of the results of published research is also required.

The following courses are offered:—

1. **Experimental Plant Morphology**: Problems and Research.
   Professor Lloyd.
2. **Plant Physiology**: Problems and Research.
   (a) Cellular physiology: biophysics and biochemistry of the cell.
   (b) Growth, irritability and reproduction.
   (c) Nutrition and respiration.
   Professor Lloyd and Mr. Scarth.
3. **Phytogenetics.**
   (a) Lectures and reading.
   (b) Laboratory work illustrative of the principles and practice of plant breeding.
   Professor Derick.
4. **Phytopathology.**
   (a) Lectures and reading.
   (b) Experimental work.
   Professor Derick.
5. **Colloquium.**
   Bi-weekly, Wednesday 4.45 p.m.

Candidates for the M.Sc. degree are required to give at least two presentations; those for the Ph. D. degree at least four.

See also Department of Botany, Macdonald College, p. 387.

DEPARTMENT OF ZOOLOGY.

MEMBER OF THE FACULTY OF GRADUATE STUDIES.

ARTHUR WILLEY:—*Professor of Zoology.*

COURSES FOR THE MASTER'S DEGREE

1. **Practical Embryology and Histology.**—The principles of development and inheritance; the differentiation of organs; the staining and mounting of tissues. Zoology 5 (see MacDonald College Announcement) may be taken concurrently.

2. **Cytology and Protozoology.**—The intimate structure of animal cells and of animal micro-organisms; advanced microscopic technique.

3. **Morphology and Economic Zoology.**—The forms of animal life and their interdependence; methods of conservation and control. Zoology 4 (see Bulletin of the Faculty of Arts) may be taken concurrently

See also Department of Entomology and Zoology, Macdonald College.

DEPARTMENT OF GEOLOGY AND MINERALOGY.

MEMBERS OF THE FACULTY OF GRADUATE STUDIES.

FRANK D. ADAMS:—*Professor of Geology and Palæontology.*
J. AUSTEN BANCROFT:—*Professor of Geology.*

ASSOCIATE OF THE FACULTY.

RICHARD P. D. GRAHAM:—*Associate Professor of Mineralogy.*

COURSES FOR THE DEGREE OF MASTER OF SCIENCE

1. **Advanced Course in Historical Geology.**—Reading under the direction of the head of the department, with frequent colloquia.

2. **Advanced Course on Ore Deposits.**—Reading with frequent colloquia and practical studies in the university collection of ore deposts.

3. **Advanced Course in Optical Mineralogy,** with practical laboratory work.

4. **Advanced Course in Petrography.**—Reading with frequent colloquia and practical work in the Petrographical Laboratory.

5. **Palæontology.**—A course of lectures with additional reading; colloquia and practical instruction in the collections of the Redpath Museum.

6. **Geological Colloquium.**—Studies in the history of geology and certain selected geological topics of special importance.

COURSES FOR THE DEGREE OF DOCTOR OF PHILOSOPHY

The Department offers the first two years of the Ph.D. course.

The course given above for the Master's degree is the first of these years.

The second year is as follows:—

1. **Special Studies in Petrography:** with extended practical work in the Petrographical Laboratory.

2. **Advanced Course in Mineralogy:** with extended practical work in the Mineralogical Laboratory.
3. **Colloquia and Journal Club.**
4. **Research work in Petrography and Mineralogy.**

DEPARTMENT OF ANATOMY.

MEMBER OF THE FACULTY OF GRADUATE STUDIES.

S. Ernest Whitnall:—*Professor of Anatomy.*

ASSOCIATE OF THE FACULTY.

James C. Simpson:—*Associate Professor of Histology and Embryology.*

Facilities will be afforded in the department, by arrangement with its head, for graduate study in Anatomy, Histology Embryology or Anthropology.

DEPARTMENT OF PHYSIOLOGY.

MEMBER OF THE FACULTY OF GRADUATE STUDIES.

John Tait:—*Professor of Physiology.*

5. **Advanced Physiology** (with laboratory)...Professor Tait and staff.

In this course certain branches of the subject will be selected for more detailed treatment because of their special medical or scientific interest. It is proposed this session to treat among other subjects the connective tissues, joints, the lymphatic system, serous cavities, blood vessels and vascular lining, cerebro-spinal fluid, nerve conduction, cerebral localization and muscular tone.

6. **Structure and Function**.....Professor Tait.

This course includes a review of modern work in biology in which structure, whether of the developing or of the adult animal, has been investigated by experimental means. The aim is to show the place and scope of physiology and of physiological method in relation to such problems. A special study will be made of structural adaptations to physically new environment.

7. **Hæmatology**.....Dr. Green and Dr. Notkin.

The course will deal with physical, physico-chemical and certain immunological problems relating to the blood fluid and to blood cells. The following questions with others will receive consideration:—Life-history of the corpuscles, special physiology of the red cells and of hæmoglobin, hæmolysis, blood transfusion, phagocytosis, coagulation and arrest of hæmorrhage.

DEPARTMENT OF PHARMACOLOGY.

MEMBER OF THE FACULTY OF GRADUATE STUDIES.

Henry G. Barbour:—*Professor of Pharmacology.*

After suitable preparation in animal physiology and biochemistry, the student must acquire a practical working knowledge of pharmacology.

To this end, the experimental course offered to students of the Medical Faculty may be pursued. Advanced work is arranged to meet the individual requirements of each student. The following courses are offered:—

3. History of Pharmacology.—Assigned readings. . Professor Barbour.

4. General Pharmacology.—Laboratory work and conferences. Pharmacology of the cell; theories of narcotic, convulsant and peripheral nerve action; synergism and antagonism; tolerance; hypersensitivity; influence of special conditions upon drug action..... Professor Barbour.

5. Chemical Pharmacology.—A lecture course with demonstrations, designed for students specializing either in synthetic chemistry or pharmacology. Emphasis is placed upon the relation of chemical structure to pharmacological action..... Professor Barbour and Dr. Stehle

6. Pathological Pharmacology.—Special lectures on the theory of the action of drugs in disease..... Professor Barbour.

7. Advanced Toxicology.—Special instruction in methods of identification of poisons in the tissues..... Dr. Stehle.

8. Special Methods.—Practical instruction in the technique of special chemical and physiological methods employed in pharmacology. Methods of bio-assay may be emphasized.... Professor Barbour and Dr. Stehle.

Colloquium.—Each candidate for either the Master's or Doctor's degree is required to present a report from the current literature, at least once a month.

WORK IN COGNATE SUBJECTS

Other courses of especial value in the training of the pharmacological student include:

Physical chemistry; advanced organic chemistry; comparative anatomy; general and special physiology; biochemistry; plant histology and microchemistry; pathology; bacteriology; experimental human psychology; radio-activity.

DEPARTMENT OF HYGIENE.

ASSOCIATE OF THE FACULTY

T. A. STARKEY:—*Professor of Hygiene.*

Students may arrange for advanced work in this field by communicating with the head of the department.

DEPARTMENT OF CIVIL ENGINEERING AND APPLIED MECHANICS.

MEMBER OF THE FACULTY OF GRADUATE STUDIES.

HENRY MARTYN MACKAY:—*Professor of Civil Engineering.*

ASSOCIATES OF THE FACULTY.

ERNEST BROWN:—*Professor of Applied Mechanics and Hydraulics.*

CYRIL BATHO:—*Associate Professor of Applied Mechanics.*

COURSES FOR THE DEGREE OF MASTER OF SCIENCE

105. **Statically Indeterminate Stresses.**—General methods of stress analysis, influence lines, applications to braced arches, rectangular frameworks, etc.; theory of riveted joints; columns with lateral and intermediate loads, etc. One term, 2 hrs., and 6 hrs. problem work....
Associate Professor Batho.

106. **Technical Elasticity.**—The general equations of elasticity with various applications (special attention being paid to approximate numerical solutions); strength of flat plates, etc.; torsion of thin tubes and prisms of non-circular section; the determination of stress distribution by means of polarized light; elastic stability; vibration of structures. One term, 2 hrs., and 6 hrs. problem work..... Associate Professor Batho.

107. **Secondary Stresses.**—Secondary stresses due to rigidity of joints deflection of floor beams, eccentric connections, latticing, etc.; critical discussion of specifications for structural members in the light of tests. One term, 2 hrs., and 6 hrs. problem work.....Professor MacKay,

108. **Reinforced Concrete Arches (Advanced).**—Preliminary design, development of influence lines, unsymmetrical arches, elastic piers, economics of concrete arches, etc. One term, 1 hr., and 6 hrs. problem work....
Professor MacKay.

109. (a) **Aerodynamics.**—Fluid motion; the principles of flight, scale effect, experimental methods and results; prediction of performance; equations of motion; stability of aircraft; propellers, etc.

(b) **Structural Design of Aircraft.**—Loading conditions during flight; detailed calculations of structural strength....
Associate Professor Batho.

110. **Hydraulics.**—General principles of hydrology in relation to power development; stream gauging and use of records; flow in streams and in open channels of regular form; effect of dams and obstructions; backwater computations; the principles of hydraulics as applied to modern turbines; general trend of turbine development; turbine testing and characteristics; special problems such as pressure surges in conduits; general consideration of water-power plants, including the study of plants in operation. ..
Professor Brown.

DEPARTMENT OF ELECTRICAL ENGINEERING.

MEMBER OF THE FACULTY OF GRADUATE STUDIES.

LOUIS A. HERDT:—*Professor of Electrical Engineering.*

ASSOCIATE OF THE FACULTY.

CLARENCE V. CHRISTIE:—*Associate Professor of Electrical Engineering.*

COURSES FOR THE DEGREE OF MASTER OF SCIENCE

1. **Advanced Mathematics.**—Lectures and study under the direction of the Department of Mathematics.

2. **Electrical Physics.**—Lectures and study under the direction of the Department of Physics.

3. **Course of Reading.**—This covers general and fundamental electrotechnics in addition to the references on the specialized subject of the thesis

The thesis will be in one of the following fields of investigation:

(a) Design, characteristics and testing of electrical machinery; investigation of special machinery; special problems of design.
Professor Herdt.

(b) Properties of dielectrics and electric insulators; laboratory instruction and experimental investigation, with facilities for high voltage testing.....Associate Professor Christie.

(c) Design, characteristics and testing of electrical engineering instruments and devices. Facilities are available for precision measurements of most of the electrical quantities. Laboratory investigation of new types and development of special devices.....Mr. Wallace.

(d) Investigation of devices for protection of electrical power systems; laboratory testing of relays and other devices; development of special types.
Assistant Professor Burr.

A workshop is available for the construction of special apparatus for research work.

DEPARTMENT OF MECHANICAL ENGINEERING.

ASSOCIATES OF THE FACULTY OF GRADUATE STUDIES.

CHARLES M. MCKERGOW:—*Professor of Mechanical Engineering.*
ARTHUR R. ROBERTS:—*Associate Professor.*

COURSES FOR THE DEGREE OF MASTER OF SCIENCE

1. **Engineering Thermodynamics.** Prerequisites, Courses 220 and 251 (see pp 238 and 242) This course comprises:—

(a) A series of lectures, supplemented by a course of reading on the theory of heat-power apparatus, such as steam turbines, internal combustion engines and refrigeration, the laws of heat transfer, the character of fuels and the phenomena of combustion, etc.

(b) Experimental investigation of a particular problem with a thesis.
Professor McKergow and Associate Professor Roberts.

2. **Machine Design.** Prerequisites, Courses 225 and 242 (see pp. 238 and 241). This course comprises:—

(a) A series of lectures, supplemented by a course of reading on special topics: friction and lubrication, efficiency and design of gearing, vibration and balancing, metal-cutting tools and more advanced problems in design.

(b) Experimental investigation of a particular problem with thesis.
Professor McKergow and Associate Professor Roberts.

DEPARTMENT OF METALLURGICAL ENGINEERING

MEMBER OF THE FACULTY OF GRADUATE STUDIES

ALFRED STANSFIELD:—*Professor of Metallurgy.*

281. **Electro-Metallurgy.**—A course of lectures and laboratory work covering in a more advanced manner the subject outlined in course 275 (see pp- 24 3-246
2 hrs. lectures and 6 hrs. lab.....Professor Stansfield.

282. **Metallurgical Engineering.**—Advanced work on materials of construction and metallurgical design. Laboratory work on the properties of metals and refractory materials and the use of metallurgical testing instruments. Drafting-room work on metallurgical design. 2 hrs. lectures and 6 hrs. lab. and drafting-room.....Mr. Sproule.

283. **Physical Chemistry of Metals and Alloys.**—The application of physical chemistry to metals and metallic alloys and to metallurgical reactions. Laboratory work on metallography, cooling curves of alloys and typical metallurgical reactions. 2 hrs. lectures and 6 hrs. lab. Mr. Roast

DEPARTMENT OF MINING ENGINEERING.

MEMBER OF THE FACULTY OF GRADUATE STUDIES.

JOHN BONSALL PORTER:—*Professor of Mining Engineering and Director of the Mining Building.*

ASSOCIATE OF THE FACULTY.

JOHN W. BELL:—*Associate Professor of Mining Engineering.*

COURSES FOR THE DEGREE OF MASTER OF SCIENCE.

The work is exclusively in Ore Dressing and consists of lectures, reading and laboratory work in the following subjects:—

1. **The History of Ore Concentration**.....Professor Porter.
2. **The Theory of Rock Crushing**.....Associate Professor Bell.
3. **The Theory of Flotation**.....Mr. Erlenborn

All candidates for the degree are required to familiarize themselves with the literature of at least one special branch of Ore Dressing, as, for example, flotation, rock-crushing, jig and table concentration, etc., the branch chosen being in most cases that in which the individual research of the candidate is being carried out.

GRADUATE COURSE IN MACDONALD COLLEGE

Macdonald College, situated at Ste. Anne de Bellevue, twenty miles west of Montreal, is incorporated with McGill University and forms one of its colleges. Its *School of Agriculture* provides the following graduate courses:—

DEPARTMENT OF BACTERIOLOGY.

MEMBER OF THE FACULTY OF GRADUATE STUDIES.

FRANCIS CHARLES HARRISON:—*Principal, Dean of the Faculty of Agriculture and Professor of Bacteriology.*

COURSES FOR THE DEGREE OF MASTER OF SCIENCE

1. **Applied Micro-Biology.**—The bacteriology of foods-technique, water hygiene, milk and milk products, meat and meat products. Food preservation. Bacterial examination of air. Epidemiology. Laboratory work, 4 hrs. per day; lectures and colloquia.

2. **The Bacterial Diseases of Plants.**—Bacterial soft, rots, wilts, blights, etc. Isolation cultural studies. Laboratory work and lectures.

3. **Veterinary Bacteriology.**—Morphology, cultivation and physiological characters of organisms causing the infectious diseases of domestic animals. Susceptibility and immunity, toxins and antitoxins. Laboratory work and lectures.

Candidates for the degree of Doctor of Philosophy will take the courses given above, with others that may be arranged with the head of the department.

DEPARTMENT OF BOTANY.

ASSOCIATE OF THE FACULTY OF GRADUATE STUDIES.

BERTRAM THOMAS DICKSON:—*Professor of Botany.*

COURSES FOR THE DEGREE OF MASTER OF SCIENCE.

1. **History of Plant Pathology.**—Lecture and reading course. One term.

2. **Systematic Mycology.**—A detailed study dealing with taxonomy, morphology, reproduction and ecology.

3. **Advanced Plant Pathology.**—Studies of plant diseases, culture and inoculation work, etc. Two terms; 2 hrs., 4 hrs. lab.

4. **Advanced Plant Physiology.**—A course adapted to Plant Pathology and dealing with enzymes, fermentation, hydrogen-ion concentration, colloidal phenomena, metabolism of the fungi. Two terms; 1 hr., 4 hrs. lab.

5. **Pathological Plant Histology.**—A detailed study of abnormal plant structures caused by myxomycetes, fungi, bacteria, insects, etc. Preparation of slides and photomicrographs. 1 hr., 4 hrs. lab.

6. **Seminar.**—Presentation and discussion of reports on assigned topics; recent work in plant pathology; original research. 1 hr.

See courses in the Department of Botany, McGill University, p. 129

DEPARTMENT OF ENTOMOLOGY.

ASSOCIATE OF THE FACULTY OF GRADUATE STUDIES.

WILLIAM LOCHHEAD:—*Professor of Entomology and Zoology.*

COURSES FOR THE DEGREE OF MASTER OF SCIENCE

1. **Advanced Systematic Entomology.**—1 hr., 4 hrs. lab. Prerequisite Courses 1 and 2 of four-year course (see Announcement of Macdonald College).

2. **The History and Literature of Entomology.** One term, 1 hr.

3. **Insect Morphology.**—A comparative study of insect anatomy. The histology, development and phylogeny of insects. Research on assigned topics. Entomology: 2 hrs., 4 hrs. lab.

4. **Advanced Economic Entomology.**—A continuation of Course 9 of the four-year course (see Announcement of Macdonald College), but covering a broader field, including the role of insects in transmitting disease to man and domestic animals and to plants; methods in practical entomology; research. 2 hrs., 4 hrs. lab.

Colloquia on assigned readings, current literature and research will be held at the discretion of the instructors.

Courses offered by the Department of Zoology in McGill University may also be taken. See p. 169.

DEPARTMENT OF CHEMISTRY.

ASSOCIATE OF THE FACULTY OF GRADUATE STUDIES.

JOHN FERGUSON SNELL:—*Professor of Chemistry.*

COURSES FOR THE DEGREE OF MASTER OF SCIENCE

1. **Chemistry of Soils and Fertilizers.**—Lectures, supplementary reading and laboratory work in the analysis of soils and fertilizers. Fall term; 2 hrs. lectures.

2. **Chemistry of Animal Nutrition.**—Lectures, supplementary reading and practice in the analysis of feeding stuffs. Spring term; 2 hrs. lectures.

3. **Chemistry of Insecticides and Fungicides.**—The manufacture, composition, analysis and uses of insecticide and fungicide materials. Practice in the analysis of such materials by the approved methods of the Association of Official Agricultural Chemists. Spring term; 2 hrs. lectures.

4. **Dairy and Food Chemistry.**—The composition of milk and its products and detection of adulteration. 2 hrs. lectures. Laboratory practice in food analysis.

5. **Research in Agricultural Chemistry.**

See Department of Chemistry, McGill University, p. 23.

DEPARTMENT OF CEREAL HUSBANDRY.

ASSOCIATE OF THE FACULTY OF GRADUATE STUDIES

ROBERT SUMMERBY:—*Professor of Cereal Husbandry.*

COURSES FOR THE DEGREE OF MASTER OF SCIENCE IN AGRICULTURE

1. **Advanced Crop Production.**—The fundamental principles of crop growth; the methods and practices of crop production.

2. **Forage Crops.**—Classification, judging, adaptation, production and uses. (a) Grasses and clovers; (b) roots and corn.

3. **Grain Crops.**—Classification, judging, adaptation, production, and uses.

4. **Field Crop Breeding.**—Principles and methods used; variations, correlations, etc., with special reference to economic characters.

5. **Forage Crop Breeding.**—Actual breeding methods and problems involved in (a) grasses and clovers, (b) roots and corn.

6. **Grain Crop Breeding.**—Actual breeding methods and problems involved.

7. **Seminar.**—Training in methods of investigation.

DEPARTMENT OF POULTRY HUSBANDRY.

ASSOCIATE OF THE FACULTY OF GRADUATE STUDIES

MORLEY A. JULL:—*Manager and Lecturer in the Poultry Department.*

COURSES FOR THE DEGREE OF MASTER OF SCIENCE

11. **Advanced Marketing Principles and Practice.**—A study of the present organizations, functions and operations of the market structure both for home and export trade. Each candidate is required to make a survey of marketing conditions in any section of the country that may be indicated. 2 hrs. (Prerequisite: Course 5; see Announcement of Macdonald College.)

12. **Advanced Poultry Farm Management** —Advanced studies of such divisions of the subject as business methods; economic conditions in chicken, tuckey, duck and goose farming; general management problems. Whenever possible, trips will be made to study conditions and systems of poultry farming. 2 hrs. (Prerequisite: Course 9; see Announcement of Macdonald College.)

13. **Seminar.**—One meeting a week.

THE ROYAL VICTORIA COLLEGE

Founded and Endowed by the late Rt. Hon. Baron Strathcona and Mount Royal.

FOUNDATION AND HISTORY

The College was opened September 4th, 1899.

It is the outgrowth of plans conceived during the early years of his Principalship by the late Sir William Dawson, which resulted in the establishment of the Ladies' Educational Association. Under the auspices of the Association, courses of lectures delivered chiefly by Professors of McGill University, were offered to women from 1870 until 1884, thus placing within their reach, to some extent at least, the advantages of a Collegiate and University education.

In 1884, during the principalship of the late Sir William Dawson, the late Lord Strathcona, then Mr. Donald A. Smith, gave a sum of $50,000, and, in 1887, a further sum of $70,000, to found the Donalda Endowment for the higher education of women, such education to be conducted in the buildings of McGill College, as a distinct course in the Faculty of Arts, with the understanding that as soon as practicable the classes were to be created into a separate college of McGill University, with a building separate from that of McGill College. Under the terms of the Donalda Endowment it was provided that degrees in the Faculty of Arts should be granted to women practically on the same conditions as to men, and that the examinations for such degrees, for classing, honours, prizes and medals should be identical with those for men.

As a result of this generous gift and in accordance with the conditions attached, courses of instruction, identical in subject and in standard with those of the Faculty of Arts, were established for women in 1884. These courses were given in the Arts Building, some of the work of the Third and Fourth Years and of the Honour Courses being conducted in joint classes.

The first graduating class of eight women was presented for the degree of Bachelor of Arts in 1888.

The ultimate object of Lord Strathcona had been the provision of a residential college, and this was realized when the Royal Victoria College was opened in 1899, and formally inaugurated by their Majesties the King and Queen (then Duke and Duchess of York) in 1901.

A Warden and Resident Staff were appointed. With these new and great advantages the instruction provided by the original endowment has been maintained as hitherto, except that the separate classes are held mainly in the College building. Women have continued to prepare for degrees in Arts, including pure science. Through the

wisdom of Lord Strathcona, provision was also made for the study of music. Since, however, the establishment of music as a separate department of the University in the Conservatorium of Music, independent instruction in music in the College has ceased, but it still maintains a resident lecturer in this subject, who is also Vice-Director of the Conservatorium. The interest of College students in music is thereby served and provided for. Women students resident in the Royal Victoria College may take degree courses in music at the Conservatorium.

Resident students of Music have the use of pianos in two practising rooms and at certain hours in other parts of the building.

Facilities for lawn tennis and for skating are provided. Subject to regulations, the students have the privilege of using the University grounds.

THE COLLEGE BUILDING.

The College building surrounded by garden and tennis courts, was erected at a cost of about $400,000 at the head of Union Avenue, upon land adjacent to the University Campus. Its beautiful and dignified exterior was designed in consistency with a careful and generous internal provision of a comfortable and gracious place of study and dwelling for students and for staff.

The building provides an academic, administrative and recreational centre for resident and non-resident students. It is situated on Sherbrooke Street, in close proximity to the University buildings, and within easy reach of Mount Royal Park. The building is fire-proof, and much thought and artistic care have been given to furnishing and decoration.

On the ground floor are the offices of the Administration, including the rooms of the Warden and Secretary, the faculty room, the students' common room, a spacious dining hall, and three lecture rooms. On the first floor are other lecture rooms, the library, reading room, and a handsome assembly hall, which is used for convocation, Conservatorium concerts, and other University purposes. This hall is sometimes lent for purposes that are in harmony with the objects of the College. The gallery, which is reserved exclusively for the use of College students on such occasions, affords the latter many opportunities of educational value. The second and third floors and a small part of the first floor are occupied by the rooms of the Resident Staff and students. Each student has a separate study-bedroom. The rooms are completely furnished, and no article of furniture need be brought by the students,

A large gymnasium is provided, fully-equipped with modern requirements. In connection with the gymnasium are bath-rooms and dressing-rooms.

ADMISSION AND INSTRUCTION

The College being a college of McGill University and its students being registered in the Faculty of Arts, they are required to comply

with the regulations concerning discipline and instruction, made by the University and Faculty, and, in addition, with such regulations as may be made for the Royal Victoria College.

Undergraduates are required to pass the Matriculation Examination of the University, or an equivalent examination (see pages 43 to 67) and can proceed to the degrees of B.A. and B.Sc., under the regulations of the Faculty of Arts as stated on pages 113-122. They are required to wear academic dress. Partial students, in order to obtain admission, must pass the matriculation examination in the subject or subjects which they wish to take, or, failing this, must be able to satisfy the Head of the Department concerned that they are qualified to proceed with the course.

Students are required to enter on the roll book of the College their names, home addresses, and addresses in Montreal. All students entering the University for the first time are required, according to municipal regulations, to present a certificate or other satisfactory evidence of successful vaccination. No student who has an infectious illness or who comes from a house in which there has been an infectious illness within a month, shall enter or return to the College without giving notice and obtaining the consent of the Warden. The health of the resident students is in charge of two physicians (Dr. W. F. Hamilton and Dr. C. F. Martin), who may be consulted, free of charge, by arrangement with the Warden. Every student applying for admission to residence is required to fill in an entrance form and to forward a medical certificate on a form provided by the College.

Instruction is given by professors and lecturers of the University and lecturers and tutors of the Royal Victoria College, who are also members of the various teaching departments of the Faculty of Arts. Graduate students can proceed to the degree of M.A., M.Sc. and Ph.D.

Lectures are given in the College or in the University buildings, practical instruction in science being given in the University laboratories. Students are assisted in their studies by the resident staff.

Students of the College have the use of the University Library, containing 180,000 volumes. There is also a College Library comprising works of general literature and the chief stated books required for the University curricula, the Department of Modern Languages being especially well represented. The College Library and Reading Room are open to resident students from 9 a.m. to 11 p.m. and to non-resident students from 9 a.m. to 6 p.m. (on Saturdays from 9 a.m. to 1 p.m.).

The Peter Redpath Museum, containing large collections in mineralogy, palæontology, zoology, botany, archæology, and ethnology, is open to students of the College.

The Warden's business hours are 10 a.m. to 1 p.m.; at other times, by special appointment. She will be glad to meet all students before the opening of the session and to discuss their plan of work then or at any other time during the session.

Applications for admission should be addressed to the Warden, Royal Victoria College, Montreal.

EXHIBITIONS AND SCHOLARSHIPS.

For a statement of the exhibitions and scholarships open to women students of the University, see pages 89 to 98.

In addition to these, and further to encourage residence within the College walls of students who might otherwise arrange to board in the city, the Warden and Staff are empowered to make nominations in any of the four college years to not more than three additional exhibitions of the value of $100.00 each.

TUITION FEES.

Students (graduate, undergraduate or partial, resident and non-resident) pay the same fees as are charged in the Faculty of Arts. For undergraduate students the fee is $100.00 (this includes fees for library, gymnasium and graduation). For further information, see page 81. Every student pays an Athletics or Grounds fee of $3.00, and undergraduate students, the Royal Victoria College Undergraduates Society fee of $2.50. All fees are payable to the Bursar, McGill University, on October 2nd and 3rd.

BOARD AND RESIDENCE.

Residence in the College is opento graduate students, undergraduates, conditioned undergraduates, and, in exceptional circumstances to partial students. *Application for residence should be made early as accommodation in the college is limited.* The charge for board and residence, in addition to the sessional fee for tuition, is $500.00 ($200.00 for room, $300.00 for board). This may be paid in two equal instalments of $250.00 each, in October and February. Room rent includes all expenses of heat and light (not other electrical attachments, for which fees will be charged). These charges cover the University session from September 28th to the close of the examinations (for members of the graduating class to May 30th).

Students entering earlier or remaining later for purposes of instruction, practice teaching, or examination, and students arriving in September for practice teaching, supplemental or matriculation examinations, are charged an additional fee of $1.50 a day. No additional fee is charged to students returning earlier than September 28th, for scholarship examinations. With the permission of the Warden, students may remain in residence during the Christmas vacation. They will be required to pay a fee of $1.50 a day for board and residence.

The charges for tuition and room rent are not subject to remission or reduction under any circumstances. In case of prolonged illness and absence from College for a period of six weeks or more. a proportionate reduction, is made in the charge for board.

All fees are payable to the Bursar, McGill University, on October 2nd and 3rd. *Notice of withdrawal should be given at the close of the session, or not later than September 1st.*

PHYSICAL EDUCATION.

Every student on entering the College is required to pass a physical examination.

The physical education offered to undergraduate students includes educational, remedial and recreative gymnastics.

The educational gymnastics are based on anatomical and physiological laws; the exercises aim at producing the highest degree of health in each individual, thus contributing to mental as well as to physical efficiency. The course of exercise, which is progressive throughout each session, encourages the harmonious development of the nervous and muscular system, and provides a remedy for incorrect habits of sitting, standing and walking. A remedial gymnastic course is prescribed for undergraduate students who are physically unfit for ordinary class work.

Work in the Physical Education Department, amounting to 140 hours during the four years' course, is required of all undergraduate students The periods are used for instruction in personal hygiene and for educational, remedial and recreative gymnastics, according to the physical requirements of the individual. Attention is given in the senior years to the subject of health problems. No student is asked to do work unsuited to her physique and students debarred from exercise of any kind are dealt with separately and carefully advised.

The Physical Director for Women arranges all regulations regarding necessary attendance and the substituting of recreative for educational gymnastics.

In all cases of absence the student is required to report to the Physical Director for Women. The ordinary interpretation of the one-eighth rule concerning absences does not apply in this Department. Every student is required to wear the costume recommended by the Department.

Recreative gymnastics, in the form of basket ball, tennis, ice-hockey, fancy skating and athletic sports, are organized by the Athletic Association, under the supervision of the Department of Physical Education. All students are examined by the Medical Officer and the Physical Director for Women, and are required to pass satisfactory physical tests before taking part in any of these activities.

Students of Music in residence are also required to attend educational gymnastic classes. Educational and recreative gymnastics are open to all partial students on payment of a fee of $5.00 for a class of two periods a week.

Strathcona Prizes are offered in this Department under the conditions stated under the Department of Physical Education in the Bulletin of General Information.

A course of instruction, theoretical and practical, is offered to undergraduates of the fourth year, who are preparing for the Academy Diploma, attendance being required by the Department of Education as follows:—

A course of 54 hours on the principles and practice of physical education. The course will cover elementary anatomy, physiology and hygiene the theory of gymnastics and class teaching.

Students who satisfactorily complete this course are entitled to certificate "B" of the Strathcona Trust, and their work is included in the requirements for the High School Diploma of the Province of Quebec.

Provision is made by the Department for the care of the health of women undergraduate students during the University session.

A leaflet giving information concerning instruction and concerning the health scheme will be supplied to all students at the opening of the session.

MUSIC.

Students taking courses in music leading to the degree or diploma are eligible for residence in the College.

Instruction in music is offered at the McGill Conservatorium of Music—Director, Dr. H. C. Perrin; Vice Director, Miss Clara Lichtenstein, Resident Lecturer in the Royal Victoria College. Students may prepare for the degree examination in music of the University, or for the Diploma of Licentiate in Music.

For information regarding courses in music, see the separate syllabus issued by the Conservatorium of Music.

COLLEGE SOCIETIES.

The students maintain the following societies:—The Undergraduates' Society, the Athletic Society, the Delta Sigma Literary and Debating Society, La Société Française, the Women Students' Christian Association.

MACDONALD COLLEGE

FOUNDATION AND PURPOSE.

Macdonald College, which is incorporated with McGill University, was founded, erected, equipped and endowed by the late Sir William C. Macdonald for the following among other purposes:—

(1) The advancement of education; the carrying on of research work and investigation and the dissemination of knowledge; all with particular regard to the interests and needs of the population in rural districts.

(2) To provide suitable and effective training for teachers, and especially for those whose work will directly affect education in schools in rural districts.

SITUATION AND EXTENT.

The College occupies a beautiful site, overlooking the Ottawa River at Ste. Anne de Bellevue, P.Q., twenty miles west of Montreal. The main lines of the Grand Trunk and the Canadian Pacific railways pass through the property, and the stations of both railways are within its boundaries.

The College property comprises 786 acres, and has been arranged into four main areas, viz.: (1) the campus, with lawn, school garden, and recreation fields for men and women; (2) experimental grounds, with plots for illustration and research in grains, grasses, and other farm crops; (3) the horticultural and poultry departments; and (4) the stock farm.

THE GENERAL ORGANIZATION.

The College is divided into three schools:—

(1) **The School of Agriculture,** which aims to provide a theoretical and practical training in the several branches of agriculture.

(2) **The School for Teachers,** which offers a comprehensive and thoroughly practical training in the art and science of teaching.

(3) **The School of Household Science,** in which young women receive training which will make for the improvement and greater enjoyment of home life and instructs them in professional work in household and institute superintendence and management.

ENTRANCE REQUIREMENTS

School of Agriculture.

See pages 54 and 55 to 67.

School for Teachers.

Teachers to be trained for the schools under the control of the Protestant Committee of the Council of Public Instruction for the Province of Quebec will be admitted under conditions prescribed by that body, particulars concerning which are given in detail in the Announcement of Macdonald College.

School of Household Science.

All candidates for admission:—

1. (a) To the homemaker course, must have entered their eighteenth year and completed grade X. of the Province of Quebec, or its equivalent.

(b) To the institution administration course, must have entered their twenty-first year, completed grade XI. (school leaving) of the Province of Quebec, or its equivalent, and have had some previous experience in housekeeping (*e.g.*, assisting with the housekeeping in their own homes).

(c) To the short courses, must have entered their eighteenth year, be able to read and write the English language acceptably and be proficient in the use of elementary mathematics.

2. Must produce satisfactory evidence as to moral character; also medical certificate of health, including successful vaccination within the six years preceding date of entrance.

PAYMENTS AT ENTRANCE

	Tuition per Session	Laboratory Fee	Caution Money Deposit	4 Weeks' Board in Adv.(a)	Doctor's Fee	Laundry Fee	Student Activities	Total
SCHOOL OF AGRICULTURE:—								
Winter Course and First and Second Years:								
Sons, daughters, etc., of farmers of the Province of Quebec	Free	$10.00	$5.00	$26.00	$4.00	....	$9.50 (b	$ 54.50
Other residents of Canada	$ 50.00	10.00	5.00	26.00	4.00	....	9.50 (b)	104.50
Students from outside of Canada	100.00	10.00	5.00	26.00	4.00	....	9.50 (b)	154.50
Third and Fourth Years:								
Sons, daughters, etc., of farmers of the Province of Quebec	50.00	15.00	5.00	26.00	4.00	....	9.50 (b)	109.50
Other residents of Canada	50.00	15.00	5.00	26.00	4.00	....	9.50 (b)	109.50
Students from outside of Canada	100.00	15.00	5.00	26.00	4.00	....	9.50 (b)	159.50
SCHOOL FOR TEACHERS:—								
Model School and Kindergarten Classes	Free	5.00	5.00	26.00	4.00	$1.00	5.00 (c)	46.00
Elementary Classes	Free	2.50	5.00	26.00	3.00	1.00	(d)	(f)37.50
SCHOOL OF HOUSEHOLD SCIENCE:—								
B.H.S.Degree Course:								
Residents of Canada	100.00	15.00	5.00	26.00	4.00	1.00	5.00	156.00
Students from outside of Canada	125.00	15.00	5.00	26.00	4.00	1.00	5.00	181.00
Homemaker and Institution Administration Courses:								
Daughters, etc., of farmers of the Province of Quebec	Free	10.00	5.00	26.00	4.00	1.00	5.00	51.00
Other residents of Canada	100.00	10.00	5.00	26.00	4.00	1.00	5.00	151.00
Students from outside of Canada	125.00	10.00	5.00	26.00	4.00	1.00	5.00	176.00
Short Courses (per course):								
Daughters, etc., of farmers of the Province of Quebec	Free	5.00	5.00	26.00	3.00	1.00	(e)	(f)40.00
Other residents of Canada	35.00	5.00	5.00	26.00	3.00	1.00	(e)	(f)75.00
Students from outside of Canada	50.00	5.00	5.00	26.00	3.00	1.00	(e)	(f)90.00

(a) Occupants of single rooms are charged $1.50 extra per week. Students in Agriculture from the Province of Quebec receive a grant from the Provincial Government of $7.00 per month of attendance on account of board.

(b) Women students in the School of Agriculture pay the same for student activities as those in the School for Teachers (intermediate class).

(c) Men students of the School for Teachers (intermediate class) pay the same for student activities as men students of the School of Agriculture

(d) Students of the elementary class pay for student activities—first term men $3.25; women $1.50; second term men $4.00; women $2.25

(e) Short course students pay for student activities—autumn and spring courses 75c; winter course $1.50

(f) Student activities to be added to this total.

THE B.S.A. DEGREE.

Students who shall have completed the regular course of study in Agriculture, as laid down in the Announcement of the College, shall have passed the prescribed examinations for graduation, and shall have performed such exercises as may be prescribed to that end—the whole to the satisfaction of the Faculty of Agriculture—shall be entitled to the degree of Bachelor of Science in Agriculture, and the degree, when abbreviated, shall be designated by the letters B.S.A.

Post-Graduate work may be taken at Macdonald College. The degrees offered are M.S.A., M.Sc., Ph.D. These courses are set forth in the Bulletin of the Graduate School.

DEGREE IN HOUSEHOLD SCIENCE

Students who shall have completed the regular course of study of the first two years in the Faculty of Arts, and shall have passed the prescribed examinations during the course, and thereafter shall have completed a special course of study for two years at Macdonald College, shall have passed the prescribed examinations during the said course and also the special examinations for graduation; and shall have performed such exercises as may be appointed to that end, the whole to the satisfaction of the Teaching Staff of Macdonald College, and also of any other examiners whom the Corporation may associate with the said staff, shall be entitled to the Degree of Bachelor of Household Science.

PROVINCIAL GOVERNMENT GRANTS TO STUDENTS FROM THE PROVINCE OF QUEBEC.

(1) School of Agriculture.

The Department of Agriculture of the Province of Quebec grants to each student who belongs to the Province of Quebec $7.00 per month of attendance employed in studying according to the time-tables in the School of Agriculture, Macdonald College. This amount will be placed to the credit of such students by the College Bursar and will be applied on account of board and lodging.

(2) School of Household Science.

The Provincial Government grants bursaries of $20.00 to $50.00 each to Quebec students from the farming community in the junior and senior years of the School of Household Science.

COLLEGE ANNOUNCEMENT.

Full details as to the courses, etc., will be found in the Announcement of Macdonald College, which will be sent on application to the Principal, Macdonald College, Que.

DEPARTMENT OF PHYSICAL EDUCATION.

FOR MEN.

DIRECTOR, DEPARTMENT OF PHYSICAL EDUCATION:—ARTHUR S. LAMB, B.P.E., M.D.

UNIVERSITY MEDICAL OFFICER:— F. W. HARVEY, B.A., M.D.

All students, on entering the University, are required to pass a physical examination (see page 71). By such an examination, any physical defect or weakness may be discovered early, and the student will be advised in regard to treatment. For those defects amenable to treatment by exercise or other hygienic measures, individual attention will be given, and the students will be advised as to what forms of exercise will be likely to prove beneficial or harmful.

I. GENERAL.

The aim of the University requirements in physical education is the maintenance and improvement of the physical well-being of the student body, and the production of graduates who are physically as well as mentally fitted for their life-work.

As voluntary exercise is of greater value than compulsory, great latitude is given the individual student in his choice of the type of activity.

The chief factors limiting this choice are:—

1. The suitability of the exercise as a means of physical education.
2. The physical fitness of the individual student to take the form of exercise chosen.
3. The possibility of effective supervision.
4. The practicability of ensuring regular participation.

The aim is not to replace the existing forms of University athletics, but to assist in developing an interest in these by every legitimate means.

II. REGISTRATION.

1. At the time of registration every male student of the first three years in the Faculties of Arts, Medicine, Dentistry and Science, and of

the first two years in the Faculty of Law shall be given a printed announcement of the University requirements in physical education.* This announcement shall include a list of the recognized forms of physical activities in which a student may take part in fulfilment of the requirements, and a statement that at the time of his medical examination he will be expected to indicate his choice of the particular forms which he wishes to follow.

2. At the time of his medical examination, each student shall be required to fill in a card indicating his choice, as outlined in paragraph III, 1. The Director shall then decide as to his physical fitness for the forms chosen and shall inform the student of his decision and note the same on his card, which shall be filed for reference.

3. Every student shall be categorized by the University Medical Officer as either:—

(A) Fit for all forms of physical exercise.

(B) Fit for a limited number of forms.

(C) Fit for gymnasium work only.

(D) Fit for remedial gymnastics, or temporarily unfit.

(E) Unfit for any forms of physical exercise.

III. EQUIVALENTS.

1. Subject to paragraphs 2 and 3 the following activities are recognized as fulfilling the requirements:—

University Rugby Football Team.
University Track Team.
University Hockey Team.
University Basketball Team.
University Boxing, Wrestling and Fencing Teams.
University Swimming and Polo Teams.
University Harrier Team.
University Tennis Team.
University Gymnastic Team.
University Indoor Baseball Team.
University Ski Team.
Gymnasium Classes.
McGill Contingent, C.O.T.C.

**Note:*—For the session 1922-23 and until further notice, this regulation will apply to students of the first two years only in the Faculty of Arts, Science, Medicine and Dentistry.

And such other activities as shall be decided upon from time to time by the Committee on Physical Education.

2. Subject to the approval of the Director, as laid down in paragraph II. 2, any student who desires to participate in competitive athletics, as mentioned in paragraph III. 1, may be excused from other forms of exercise during the season of training, provided that this is performed to the satisfaction of the Director.

3. If successful in making a place on the team, he shall be excused from any other forms of exercise for the season of play, and *may* be excused for the remainder of the term at the discretion of the Director.

4. Any student who has been placed in Categories A, B, C or D at his University medical examination, and who does not voluntarily take part in any of the other recognized forms of exercise as provided above, shall be required to attend the regular gymnasium classes appropriate to his category.

IV. ATTENDANCE.

1. The amount of time required to be devoted to physical exercise by each student shall be two hours per week throughout the session. Until such time as the University is in possession of its own gymnasium, however, this amount of time may be reduced by the Committee on Physical Education to meet the exigencies of gymnasium accommodation.

2. A record will be kept of the attendance of every student as far as his required physical training is concerned.

3. Unexcused absences up to one-eighth of the required number of periods shall be allowed. Unexcused absences exceeding one-eighth, but not exceeding one-fourth, may be allowed if at the end of the session the student passes a special examination and satisfies the Director that he has made sufficient progress. Unexcused absences exceeding one-fourth shall disqualify a student. Such students shall be required to take extra gymnasium class work to the satisfaction of the Director, a supplemental course being given in the month of September for this purpose.

4. At regular intervals during each session and also at the end of each session, the Director of Physical Education shall furnish the Dean of each Faculty with a list of students who have failed to meet the attendance requirements as laid down in the ordinary curriculum, or who have proved unsatisfactory in other respects, and such cases shall be dealt with by the respective Faculties.

No student in default shall be allowed to proceed to the next year of his course unless for special reasons exemption should be granted on the recommendation of his Faculty and approved by the Committee on Physical Education.

Not less than one month before the conferring of degrees in each session the Director shall furnish to the Registrar of the University, for transmission to Corporation and the Faculties concerned, a list of all students, being candidates for degrees at the forthcoming Convocation, who have failed to satisfy the requirements of the Committee on Physical Education, and no Diploma for a degree shall be issued to any such candidate unless by the express direction of Corporation.

V. EXEMPTIONS.

Claims for exemption from the above requirements shall be made in the first instance to the Director, who shall refer them to a sub-committee on exemptions appointed by the Committee on Physical Education.

VI. HEALTH.

Provision is made by the Department for the care of the health of undergraduate students during the session. Hospital accommodation is provided for seven days only, except under special circumstances.

A special leaflet concerning this service and the general work of the Department will be supplied to all students at the opening of the session.

VII. MEDALS.

The Wicksteed silver and bronze medals for physical education (the gift of the late Dr R. J. Wicksteed) are offered for competition to students of the graduating class and to students who have had instruction in the gymnasium for two sessions; the silver medal to the former, the bronze medal to the latter. The award of these medals is made by judges appointed by the Corporation of the University. Every competitor for the silver medal is required to lodge with the judges, before the examination, a certificate of good standing in the graduating class, signed by the Dean or Registrar of the Faculty to which he belongs, and the medal will not be awarded to any student who may fail in his examination for the degree.

VIII. STRATHCONA CERTIFICATE COURSE.

The Departments of Education and Physical Education offer the following courses:—

FOR MEN UNDERGRADUATES OF THE FOURTH YEAR.

A course of 45 hours on the principles and practice of physical education. The course will cover elementary anatomy, physiology and hygiene, the theory of gymnastics and class teaching.

Students who satisfactorily complete this course are entitled to certificate "B" of the Strathcona Trust, and their work is included in the requirements of the High School Diploma of the Province of Quebec.

FOR WOMEN.

(ROYAL VICTORIA COLLEGE.)

DIRECTOR OF THE DEPARTMENT:—A. S. LAMB, B.P.E., M.D.
UNIVERSITY MEDICAL OFFICER:—F. W. HARVEY, B.A., M.D.
PHYSICAL DIRECTOR FOR WOMEN:—MISS ETHEL M. CARTWRIGHT.
ASST. PHYSICAL DIRECTOR FOR WOMEN:—

Classes in educational gymnastics for all undergraduates of the College and for resident students of music are conducted in the gymnasium of the Royal Victoria College. All students on entering the University are required to pass a physical examination (see regulation on page 71) and are also required to pass satisfactory physical tests before taking part in any of the outdoor or indoor physical exercises organized by the Department, whether educational, remedial or recreational.

Work in the Physical Education Department throughout the foua-year course (amounting to 140 hours in all) is required of all undergraduate students.* These periods will be used for instruction in personal hygiene and for educational, remedial and recreative gymnastics, according to the physical requirements of the individual. No student will be asked to do work unsuited to her physique, and students debarred from exercise of any kind will be dealt with separately and carefully advised.

Classes in Physical Education required of women students in other faculties than the Faculty of Arts are also held in the gymnasium of the Royal Victoria College.

Partial students are admitted to the classes in educational and recreative gymnastics on payment of a fee of $5.00.

Reports of attendance in physical education will be regularly sent to the Faculty.

Strathcona Prizes.—Three first prizes of $8, $10 and $12, and three second prizes of $5, $6, and $9, are open to students for competition in the Second, Third and Fourth Years respectively. Two prizes of $5 are offered for competition to the students of the First Year; one for students who have taken part in educational gymnastics at school, and the other for students who have had no previous physical training.

All competitions will be held under the following regulations:—

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*In all cases of absence the student is required to report to the Physical Director for Women. The ordinary interpretation of the one-eighth rule concerning absences does not apply in this Department. Every student is required to wear the costume recommended by the Department.

1. Competitors will be awarded 50 per cent. of the marks on the work of the session.

2. No prize shall be awarded unless the judges consider the work up to the standard of 75 per cent.

3. The prizes shall not be awarded in the Second, Third and Fourth Years should the winner fail to obtain her full academic standing. The prizes in the First Year shall not be awarded if the winners fail in more than one subject at the sessional examinations.

4. Competitors will be judged on the work taught in the Physical Education Department during the session, the Physical Director for Women arranging all details concerning the competition. A programme of the competitions will be posted not later than March 1st.

5. Judges for these competitions shall be appointed yearly by the Committee on Physical Education.

STRATHCONA CERTIFICATE COURSE.

A course similar to that announced on page 404 is given for the women undergraduates of the Fourth Year.

DEPARTMENT OF SOCIAL SCIENCE

HISTORY OF THE DEPARTMENT

The Department of Social Service at McGill University was founded in 1918. The Joint Board of the Theological Colleges had for some time realized the need for lectures on Social Service subjects in Montreal for their own students, as well as for the general public. Early in the year 1917 Sir William Peterson, then Principal, and Professor J. A. Dale considered the establishment of a Department of Social Service in the University. In 1918 Sir William Peterson accepted a generous offer of financial support from the Joint Board of the Theological Colleges for a term of three years. This was supplemented by a pledge of generous support for three years from the Graduates' Society and two private individuals.

The Department was expected to develop a course of training which would supply the constant demand in Quebec and the Maritime Provinces for trained Social Workers, a demand which in the past had been met by securing workers from the United States, who, being for the most part American citizens, soon returned to their own country.

The first session of 1918-19 was devoted to preparing the way for a full year course. Over two hundred students registered in Extension Lectures offered by the Department.

The second session offered a full year Certificate Course with practical experience in field work, for which nine students received certificates in May. Over two hundred other students registered as partial students, or for an Extension Course again offered by the Department.

During the third Session, 1920-21, a Diploma Course, covering fourteen subjects, was offered. The training period was extended from seven to nine months to admit of two months' intensive Field Work experience after lectures and examinations were over. Twelve students took the Diploma Course, and a hundred and four students registered as Partial Students. There was no Extension Course this Session.

During the fourth Session, 1921-22, both a one-year Certificate and a two-year Diploma Course were given. In the spring of this year Mr. J. Howard T. Falk, who had conducted the work of the Department with eminent success during the four years of its existence, resigned the directorship to accept the office of Executive Secretary of the Montreal Council of Social Agencies. He is succeeded by Dr. Carl A. Dawson, who is also Assistant Professor of Social Science in McGill University.

THE CALL TO SERVICE

You have it or you have not : you alone know the motive which prompts you to train for Social Service.

For most people the daily task is a means to an end ; with the closing of the office or classroom door life begins. Recreation in all its forms is

sought as an offset to the monotony of work, not as the means by which that work may be enriched. This is inevitable, for most workers it can never be otherwise; but there are some people who must find outlet for their personality in their work: to them Social Work offers a rich field.

The Need for Trained Service:

The Province of Quebec, from public and private funds, spends close to six million dollars a year on the care of its unfortunates, a sum large enough to justify the employment of persons with the highest qualifications.

The Demand for Trained Service

Is limited but certain for students who have the right human qualifications and the practical training necessary to put them into effect.

ADMISSION

Candidates for admission are required to file application on a form supplied by the Department. Applications should be made as soon as possible to the Secretary of the Department.

DIPLOMA COURSE.—Students entering for the Diploma Course will be required to give two years. No student will be admitted without University Matriculation Certificate or its equivalent.

CERTIFICATE COURSE.—Students taking the Certificate Course will be required to give nine months. Students will be admitted without a Matriculation Certificate if they are able to show evidence of academic standing sufficient to enable them to take the Course with profit to themselves.

Graduate nurses with general education equivalent to matriculation standard should take the course successfully. College graduates or persons of equivalent education, who have had from three to five years' experience in some other field of work, such as teaching or business, are notably successful in Social Service studies. Persons under twenty-one years and over thirty-five years of age will only be admitted for exceptional reasons.

Training may make a Social Worker efficient, but in social work, as in much other work, it is the human qualifications which distinguish the effective from the ineffective. The success of the Social Worker is largely dependent upon personality; therefore, tact, patience, sympathy, poise, cheerfulness and that something which we may term "religion," and which "calls" a person into social work, may be considered the prerequisites of an embryo Social Worker.

REQUIREMENTS FOR A DIPLOMA OR CERTIFICATE

The Courses taken by a student will be arranged for each student individually, according to previous training and experience, and according to the student's inclinations.

The Diploma or Certificate of the Department is awarded to students who obtain an average mark of 50 in all, and not less than 40 in any one

written examination. Students must also receive satisfactory reports from the social agencies in which their field work has been taken.

Students holding degrees from any recognized University will be given credit for courses which have been covered by them in taking their degree, but the Department may require them to take an examination on such subjects.

FIELD WORK

Too much emphasis cannot be given to the importance of field work as part of the training of a social worker. The field work during the first term will be taken with the Family Welfare Association. In the second term the student will be permitted to choose from one of several fields which will include work with Hospital Social Service Departments, Children's Agencies, the Women's Directory, which works with unmarried mothers, and the Social Settlements.

TIME REQUIRED

Students cannot expect to do the work of the Department satisfactorily unless they give their full time to it.

Diploma and Certificate students will be required to give not less than twelve hours' lecture periods per week, in addition to prescribed Laboratory and Field Work.

LIBRARY AND READING ROOM

Students will have the privilege of using the Redpath Library, on making the customary deposit of $5.00; a small reference library is maintained for the use of the students in the Social Service Reading Room.

FEES AND OTHER EXPENSES

1. The annual fee for Diploma or Certificate students is $70.00; if paid in two instalments, in October and January, $72.00.
2. For Partial students the fee is $7.50 for a one-hour course; $10.00 for a two-hour course; and $5.00 for a half or term course.
3. The fee for the Extension Course is $7.50.
4. The Grounds Fee, payable by all students to the University, is $3.00; this fee permits students to take part in athletics, etc.
5. Books and other school expenses should not exceed $25.00.

BOARD AND LODGING

Accommodation for a limited number of out-of-town students can be arranged at the University Settlement, 179 Dorchester St. West,

fifteen minutes' walk from the University. Rates: $10.00 to $15.00 per month for room alone; $35.00 to $40.00 per month for room and board. Residents are required to give one or two evenings a week to helping in the work of the Settlement.

BURSARIES

A small loan fund is at the disposal of the Committee, from which assistance can be given to a student who would otherwise be unable to take the work of the Department. This sum represents the balance of an anonymous gift of $1,000 for this purpose.

Loans will be repayable on easy terms.

Applications for assistance from this fund should be made as early as possible.

COURSES.

1. **Introduction to the Study of Society.** Three hours.
Assistant Professor Dawson.

Society and the group; social interaction and the nature and effects of communication; social forces, simple and complex; competition; war, racial and cultural conflicts; social control; collective behavior.

2. **The Community.** Three hours, First Term.
Assistant Professor Dawson.

Nature of the community (urban or rural) and social organization and the underlying forces which produce them; character of different communities and neighborhoods; comparison of rural and urban communities and the modifications they are undergoing in modern development; connections of neighborhoods, groups and organizations presented by means of maps, case studies and concrete investigations.

3. **Social Pathology.** Three hours, Second Term.
Assistant Professor Dawson.

A survey of current social problems; dependency (including poverty); defectiveness; degeneracy; social unrest and disorder; the pathology of play and amusements; social disorganization and reorganization; crime and its treatment; delinquency and the gang.

4. **Elementary Psychology.** Three hours.....Associate Professor Tait.

Lectures, recitations and exercises.

Text-book : Warren, *Human Psychology*.

5. **Social Psychology.** Three hours.....Associate Professor Tait.

Lectures, prescribed readings and reports.

6. **Elements of Political Economy.** Three hours.. Professor Leacock.

A discussion of the elementary principles of Economics, including an analysis of the production, exchange, distribution and use of wealth.

Text-book: *Principles of Political Economy*, Gide. Edition of 1913. (D. C. Heath & Co.)

7. **Animal Biology.** Three hours, First Term.....Professor Willey.

Monday, Wednesday and Friday at 11. A weekly laboratory period of two hours will be substituted for the Friday lecture by arrangement.

Text-book: *Principles of Animal Biology*, Shull (New York: McGraw-Hill Co., 1920).

8. General Botany. Second Term, 2 hours lectures, Wed. and Fri. at 2, and 2 hours laboratory, Mon., 2–4.

Professor Lloyd, Mr. Scarth and Miss Symons.

A synthetic course giving the student a view of the science of botany as a whole.

9. Genetics. Three hours.....Professor Derick.

Development; influence of environment; variation; heredity; selection; eugenics.

(*Courses 1-9 are given in the Faculty of Arts.*)

10. Industrial History. One hour.....Associate Professor Hemmeon.

History of the guild, domestic and factory systems; the agricultural and industrial revolutions; modern industrial conditions; history of trade unionism; state socialism, syndicalism and guild socialism; recent developments.

Books for reference: *Industrial Democracy*, Sydney and Beatrice Webb; *Trade Unionism and Labor Problems*, F. B. Commons; *National Guilds and the State*, J. A. Hobson.

11. Home Economics. One hour, Second Term.....Miss Philp.

Household management, the dietetic and caloric value of food; economy in buying; economical menus.

12. Public Hygiene.....Professor Starkey.

13. Social Work with Family.....Miss Wisdom.

Text-book: *Social Diagnosis*, Mary Richmond.

14. Child Welfare. One hour.....Mr. Falk.

Influences necessary to the normal development of the child in its home, at school, at play and at work; the treatment of dependent, neglected, delinquent and defective children; the child of the unmarried mother; child-welfare legislation.

Text-Books: *Child Placing in Families*, Slingerland (Russell Sage Foundation); *How Two Hundred Children Live and Learn*, Reeder (Noble); *Juvenile Courts and Probation*, Baldwin and Flexner (Century Co.); *Delinquent Child and the Home*, Breckinridge and Abbott (Russell Sage Foundation).

15. Organization and Administration of Social Agencies. One hour, First Term.....Mr. Falk.

Organization; forms of management; responsibilities of a director or trustee; responsibilities of executive secretary; office management, conduct of meetings; charitable accountancy and auditing; financial statements; publicity in social work; financing social agencies; federation in social work.

16. Social Research and Statistics. One hour, Second Term. . Mr. Falk.

Research: necessity for, methods of; preparation of questionnaires. Statistics: value and use; preparation; tabulation; and presentation.

Text-Book: *Statistics*, Bailey and Cummings (McClurg).

17. The Psychology of Play; Playground Supervision and Equipment.

Students intending to enter the Social Settlement field will be required to take this course, which is given in the School of Physical Education.

Consideration will be given to the principles underlying the play life of the child; classes in folk dancing, and games for all ages.

EXTENSION LECTURES

An extension course of evening lectures will be arranged by the lecturing staff.

EXTENSION DEPARTMENT.

The Extension Classes are open to the public, no examination test being required. At the conclusion of each session written examinations will be held, and special certificates will be awarded to successful students.

Civil Service students and those preparing for the examinations held in connection with the Chartered Institute of Secretaries, London, England, and with the Association of Accountants, Montreal, will find some of these classes especially useful. All extension courses, unless otherwise stated, begin the third week in October.

The programme of classes, as organized for 1922-23, is as follows:—

Commercial Law.

A course of 25 lectures on the general principles of commercial law, specially designed to render service to the business man, banker, and accountant in their everyday transactions, and to help students who may be preparing for any of the examinations held in connection with the Association of Accountants in the Province of Quebec.

The subject is taken up from a practical point of view, with illustrations from actual cases, and the lectures deal with the questions that are likely to arise in the ordinary course of business.

The matter treated is as follows:—Persons and their capacity to contract—minors, married women, and other persons whose capacity is limited; the different kinds of property; the general principles of contracts; payment, and other methods in which debts are extinguished; the sale of goods; the lease and hire of property; the lease and hire of services; building contracts; carriers by land and water; agency; hypothec; pledge; contracts of guarantee; bills of exchange and other negotiable instruments; partnership; corporations; banking; rights of creditors over a debtor's property; privileges; insolvency law.

Each lecture lasts an hour and a half, and is complete in itself. The course is open to both men and women.

Tuesdays, at 7.45 p.m. Fee for the course, $10.

Lecturer:—Mr. Dale Harris.

Higher Accountancy and Auditing.

This course, consisting of 75 one-hour periods, or their equivalent, is especially intended for Commerce graduates proceeding to the diploma of C.A. It is also open to outside students from the various accountants' offices.

The following is the programme of work to be covered:—

ACCOUNTANCY.

(a) **Partnership.** The formation, continuance, and dissolution of partnership and problems connected therewith, including joint adventures.
(b) **Companies.** The formation, reconstruction, amalgamation and liquidation of companies, and the various problems affecting corporation finance.
(c) **Branches, Consolidations, Mergers, Accounts of Head Office and of Branches.**
(d) **The Accounts of Trustees and Executors,** including apportionment between capital and revenue, legacies, advances to beneficiaries and other special points.
(e) **Bankruptcy and Insolvency Accounts,** with special reference to the Bankruptcy Act of 1920.
(f) **Cost Accounting.**
(g) **Income Tax and the like.**
(h) **Other Companies whose accounts require special treatment,** such as Land Companies.

AUDITING.

(a) **Principles of Auditing.** Statutory and non-statutory audits, objects of an audit, considerations on the commencement of an audit.
(b) **Audit of Cash Transactions.** Internal checks, vouching payments and receipts and various considerations arising therefrom, missing vouchers, verification of cash in hand and at bank.
(c) **Audit of Trading Transactions.** Internal checks, the vouching of purchases and sales, allowances and returns, and the examination of the accounts receivable and accounts payable ledgers.
(d) **Audit of the General Ledger.** Deferred charges, accrued assets and charges, valuation of assets, depreciation, reserves, etc.
(e) **The Verification of Various Classes of Assets.**
(f) **The Audit of a Limited Company.** Powers, share capital, bonds, directors, divisible profits, form of accounts and the powers and duties of auditors.

(g) **Special Points in Different Classes of Audits. Insurance and** Trust Companies, Banks, etc.

(h) **Investigations.**

Mondays and Wednesdays at 7.30 p.m.; commencing **Oct. 16th.**
Fee for course, **$25.00.** **Lecturer:—H. D. Clapperton,**

Political Economy.

A course of 25 lectures, especially intended to meet the needs of candidates studying for the final examination of the Association of Chartered Accountants, candidates for the Civil Service Examination, Division B, junior clerks in banks, and other persons interested in the subject from a practical standpoint.

The following subdivision will indicate broadly the subject matter dealt with in these lectures:—

Wealth and its productions; the theory of value; the theory of monopoly price; money; index numbers and the rise in the cost of living; international trade and the foreign exchanges; free trade and protection; distribution—rent, wages, interest, profits and the theory of population; taxation and public finance; social legislation and socialism; the economic aspect of the war.

Thursdays, at 5 p.m. Fee for the course, $7 50.
Lecturer:—B. K. Sandwell.

English Literature.

A course of 30 lectures on "The Development of Shakespeare as a Dramatist." This course is open to teachers and will count for them as one unit.

Wednesdays at 5 p.m. Fee for the course, $7.50.
Lecturer:—Dr. Cyrus Macmillan.

French Literature.

A course of 20 lectures. This course of lectures will be given in French.
Fridays at 4 p.m. Fee for the course, $5.00.
Professor du Roure.

Metallography.

An evening course of 15 lectures and laboratory periods for practising metallurgists and others who are interested in metals or alloys and who are unable to attend in the day time.

No previous knowledge of the subject is assumed and the course is essentially a practical one from first to last. Ferrous and non-ferrous metals are dealt with equally, training being given in preparing them for examination under the microscope, and finally photographing the various

structures developed. Material additions have been made to the equipment this year. If any students from a previous year desire to continue their work provision will be made for an advanced class if sufficient members apply.

Monday evenings, from 8 to 10.30, commencing November 13th, 1922.
Fee for the course, $20.00. Messrs. H. J. Roast and C. F. Pascoe.

As only 12 members can be taken at one time application should be made as early as possible. Members will be admitted in the order of their application.

Psychology.

A course on the essential principles of Psychology.
Mondays at 8 p.m. Fee for the course $7.50
Dr. W. D. Tait.

The Development of the Book.

A popular sketch of the history of human record from primitive times to the invention of printing in Europe. After a consideration of early records and writing materials, the hieroglyphics of Eygpt and the inscription of Babylonia and Assyria are briefly considered, and the development of writing is traced through Greek and Roman times to the Mediaeval manuscript. A brief sketch of the influence of the wood block provides an introduction to the invention of printing. Illustrated with lantern slides and library exhibits.

To be given in 2nd term. Particulars as to hours, fee, etc., will be announced. Dr. G. R. Lomer.

Export Management.

A course of about 40 lectures will be given early in 1923, partly by the University and partly by the Department of Trade and Commerce, Ottawa. These lectures are primarily intended to instruct and assist exporters or would-be exporters in the best ways of establishing themselves securely in foreign markets, and will cover such important aspects of commerce as:

(1) Study of foreign products and foreign markets.
(2) Sources of commercial information.
(3) Transportation systems and Customs regulations.
(4) Preparation of goods for foreign markets, including methods of packing.
(5) Choice of agents and representatives.
(6) Foreign Exchange and the financing of shipments.
(7) General considerations bearing on important phases of international trade.

(8) Foreign Correspondence.

Interesting slides and films will be provided by the Department of Trade and Commerce to illustrate the course.

Further details will be published early in January, 1923, before the course begins.

Industrial History.

History of the guild, domestic and factory systems; the agricultural and industrial revolutions; modern industrial conditions; history of trade unionism; state socialism, syndicalism and guild socialism; recent development. *Books for reference:*—**Industrial Democracy,** Sydney and Beatrice Webb; **Trade Unionism and Labor Problems,** F. B. Commons; **National Guilds and the State,** J. A. Hobson.

Wednesdays at 4 p.m. Fee 7.50

Lecturer:—Dr. J. C. Hemmeon.

Home Economics.

Household management; the dietetic and caloric value of food; economy in buying; economical menus.

One hour, Second Term. Hour to be announced. Fee $5.00

Miss Bessie M. Philp.

Social Science.

Society and the group; social interaction; social forces; social control: collective behaviour, etc.

Thursdays at 4 p.m. Fee $5.00

Lecturer:—Dr. Dawson.

Social Problems.

Lecturer: Dr. Dawson; 2nd term.

Fee and hour to be anounced.

Child Welfare.

Influences necessary to the normal development of the child in its home, at school, at play and at work; the treatment of dependent, neglected, delinquent and defective children; the child of the unmarried mother; child welfare legislation.

Text-books:—Child Placing in Families, Slingerland, (Russel Sage Foundation.) How Two Hundred Children Live and Learn, Reeder, Noble.

Juvenile Courts and Probation, Baldwin and Flexner, (Century Co) The Delinquent Chield and the Home, Breckinridge and Abbott (Russel Sage Foundation).

Two Hours, second term. Fee $7.50

Mr. J. Howard T. Falk.

Insolvency.

A course of lectures on the law of insolvency will be given during the second term, by a member of the Faculty of Law. Particulars will be announced in due course.

COURSES PRIMARILY FOR TEACHERS, BUT OPEN TO THE PUBLIC.

(1) **English Literature.** General Course, as for students in First year Arts. 2 hours session.

Tuesdays, 5.30 p.m.; Thursdays, 8.30 p.m. Fee $10.00

Professor Macmillan and Assistants.

(2) **Educational Pychology.** 2 hours session.

Tuesdays, 4.30 p.m.; Thursdays, 7.30 p.m. Fee, $10.00

Dr. W. D. Tait.

(3) **Botany.** 2 hours session.

Mondays and Fridays at 5.30 p.m. Fee $10.00

Professor Carrie Derick.

(4) **History.** Modern History, including Canadian. 2 hours session

Mondays and Fridays at 4.30 p.m. Fee, $10 00

Dr. Fryer.

Each of the above four courses counts as one unit.

In addition to the above courses, the course in English Literature, "The Development of Shakespeare as a Dramatist", is open to teachers and will count for them as one unit.

Courses at Provincial Centres. Extension courses for teachers will be offered in English Literature at Quebec and in Psychology at Sherbrooke during the session 1922-23.

Other Lecture Centres will be established as the demand arises and circumstances warrant.

Registration and Payment of Fees.

Intending students should register and pay their fees at the office of the Registrar and Bursar, respectively, before the several courses open. For the convenience, however, of those who may be unable to get to the University during the business hours, a person authorized to register students and collect fees will attend at the lecture hall about the beginning of the course. All fees must be paid by the evening of the third lecture, and in no case shall any fee be returned. Further information in connection with Extension Courses may be obtained from the Registrar's Office.

SCHOOL OF PHYSICAL EDUCATION

GENERAL INFORMATION.

History and Aims.

The McGill School of Physical Education was established in 1912, and has grown from a short summer course to a full two years' course, which is now officially recognized by, and is an integral part of McGill University.

It is the only School of Physical Education in Canada connected with a University with a full two years' course, and it has been fulfilling its purpose to provide Canada with a training centre for Teachers of Physical Education, with marked success since its inception.

A course in Massage and Remedial Gymnastics was given in 1914 to train workers for civilian and hospital work; this was amplified later in anticipation of war needs and graduates of this course have done excellent work in the rehabilitation of wounded soldiers and in civilian practice. A further extension of the course was recently made to include all the Physiotherapeutic Measures, Hydrotherapy, Electrotherapy. This course has been temporarily discontinued.

The modern conception of education is one of intellectual, moral and physical development, and not, as has been too frequently misunderstood, the development of the intellect alone. Intellectual development signifies those attributes of thinking, reasoning and expression. Moral development tends to stimulate honourable, righteous and virtuous conduct, while physical development, or education, provides a base, or foundation, essential to the body in order that intellectual and moral development may be facilitated. It is through increased physical health, strength, efficiency and a more harmoniously co-ordinated muscular system, that the intellectual and moral attributes of character are stimulated and developed in the general scheme of education.

In addition to the educative, moral and developmental values of properly supervised physical activities, there is its corrective aspect. Through the skilful administration of special exercises, certain physical defects may be remedied. Physical Education is also an important factor in preventive medicine by the emphasis it places upon hygiene and sanitation, as well as by the increase in the power of the body to resist infection and disease resulting from a healthy and organically sound body.

That these considerations are now more generally recognized as necessary in a complete education, is shown by the rapid strides that Physical Education has made in recent years.

Insurance Companies, Life Extension Organizations, and Industrial concerns are realizing that physical efficiency means economy, and, on a purely business basis, have taken steps to have Physical Education introduced, and properly supervised. Leading Educational Institutions, on the other hand, have legislated for intelligently supervised compulsory activities and sanely governed athletic contests for the mass instead of for the few. It is only by the scientific and skilled control of these most

important of our activities that the fullest benefits can be secured. It is to this end that the McGill School of Physical Education is conducting a course for the training of teachers, who will be able intelligently to supervise and control such activities, and thereby make their contribution toward the upbuilding of a vigorous race through health, happiness and efficiency.

The Field:

The field for trained teachers in Physical Education is rapidly increasing, and widening in scope, the demand far exceeding the supply in such organizations as the following:—

Public and Private Schools.
High Schools.
Colleges.
Y.M.C.A.'s.
Y.W.C.A.'s.
Church Clubs.
Playgrounds.
Recreation Centres.
Welfare and Social Clubs.
Settlements.
Industrial Organizations.
Boy Scouts.
Girl Guides.
Summer Camps, etc.

Qualifications :

In addition to the matriculation requirements, there are certain qualifications necessary for the student who is to become a successful teacher of Physical Education. Because of the intimate contact with the pupils and the great influence that the teacher can exert, the student must be possessed with high ideals, moral character, noble aspirations, and a forceful personality. The student must have ability to initiate, organize and control physical activities, and also be able to counsel and advise upon personal questions with both children and parents. Students must have had some practical training before registration into the fascinating and absorbing profession of Physical Education.

Courses Offered:

A two years' course, from October to May inclusive, is given in the theory and practice of Physical Education. This course is required for the Diploma of the School, and gives the student a thorough understanding of the mechanism of the human machine, its anatomy, physiology, and the underlying principles governing the various functions of the mind and body. The student is made familiar with the theory and practice of Physical Education in its many forms, and, in addition to actual partici-

pation in the various activities, there is, before graduation, a considerable amount of time devoted to practice teaching under supervision.

Partial Students may be admitted for the study of special subjects. Special arrangements will be made for admission to the course on Playground Problems.

Facilities:

The work is carried on in the University buildings; the magnificent laboratories and museums being at the disposal of the students.

The Redpath Library, with approximately 220,000 volumes and pamphlets, is available for use by the students, as are the University Hockey Rinks and Tennis Courts.

A special Library of selected works and the leading magazines on Physical Education are available for use by the students.

Through the kindness of the Protestant Board of School Commissioners, the Day Nursery and the Protestant Orphans' Home, exceptional facilities are afforded for practice teaching and observation.

Clinical work and practical demonstrations are carried on in the Out-Patient Departments of the Royal Victoria and Montreal General Hospitals.

Hostel:

A residence at 724 University Street, in the immediate vicinity of the campus, is conducted by the University and is available for students, provided application is made at an early date. Printed regulations will be supplied to intending students.

Costume for Women Students:

The regulation costume of the School must be worn and students will not be permitted to wear other than the regulation garments. Measurement blanks will be furnished upon registration and students will be advised where the costumes can be secured, the approximate cost being $20.00 (dancing sandals and shoes extra); list of articles required, including clothes and books, with approximate cost will be sent to students on application.

For ordinary wear, students are required to wear boots or shoes, the inner line of which is moderately straight, with block heels not higher than an inch and a half.

Student Organization:

The students organize their own Association and elect a President, Vice-President, Secretary-Treasurer, and a Manager for each type of athletics.

Alumnae Association:

There is a very active association of the graduates of the School which meets regularly for mutual benefit. It is the endeavour of the School to keep closely in touch with its graduates, to locate them in positions for

which they are best suited, to advise upon particular problems, and to furnish them from time to time with new ideas and inspiration for the profession in which they are engaged.

Physical Examination :

In order to safeguard the health of the student, every student on entering the School will be required to pass a satisfactory physical examination before proceeding with the course. In order to be sure of the applicant's fitness to undertake the course, out of town Students are required to submit a medical certificate before registration. (See application form.)

Vaccination :

All students entering the University for the first time are required to present a certificate, or other satisfactory evidence of successful vaccination, failing which, they shall at once be vaccinated in a manner satisfactory to the authorities.

Admission :

For the Session 1922-23, only women students will be admitted to the regular courses in the School, and students will not be admitted who are less than eighteen (18), or more than twenty-seven (27) years of age, except under special conditions. A personal interview is desirable and applicants must have had some practical experience of physical work before registration.

Two references, one of these from the parent or guardian, must be submitted with the application form. The second reference must not be from a relative.

Partial students, both men and women, will be admitted to special courses at the discretion of the Committee, and the work done will count toward the Diploma of the School.

Registration:

Registration for both old and new students will take place on Tuesday September 19th, 1922, and the opening lecture will take place on Wednesday September 20th.

Application forms should be returned not later than September 11th, 1922.

EXAMINATIONS AND PRIZES.

Diplomas:

Examinations will be conducted in all subjects and diplomas granted to successful students at the end of the session.

50 per cent. is required for a pass, 60 per cent. for second class, 75 per cent. for first class; but at least 60 per cent. must be made on teaching and in the major practical subjects.

The Educational Diploma is recognized by the Protestant Committee of the Council of Public Instruction, Province of Quebec, and the Protestant Board of School Commissioners of Montreal as qualifying for the salary of Specialist in the Public Schools.

Students failing in their sessional examinations may, at the discretion of the Committee, take supplemental examinations in the succeeding session.

Prizes:

1. First Year Prize.—The School offers a prize to the student of the First Year who attains the highest general proficiency in the sessional examinations.

2. Final Year Gold Medal.—The School offers a prize of a gold medal to the student of the graduating year who attains the highest general proficiency throughout the course.

3. A cup presented by the Class of 1915-16 is held for one year by the student of the second year gaining the highest standing in practical work.

Note:—No student shall be entitled to more than one prize in the final year.

Regulations:

1. All students enter the School on an indeterminate probation. At the end of the first term, students who are considered unsuitable for the profession will be advised to discontinue. $77.00 of the fees paid at the beginning of the course will not in this case be returned.

2. A student may at the discretion of the Committee be requested to withdraw at any time for reasons of unsatisfactory work or conduct.

3. Except in the case of illness or emergency students must not absent themselves without previous permission, and students persistently late or absent will not be allowed to sit for the examinations.

4. No student will be permitted to participate in outside demonstrations, classes or teams, etc., without first having secured permission from the Director.

COURSES OF INSTRUCTION.

(The School reserves the right to change any of the Courses here stated.)

Juniors.	Hour.
Physics	1
Chemistry	1
General Anatomy and Physiology	3
Osteology and Myology	1
Voice Development and Training	½
Theory of Physical Education	1
Class Management and Teaching	1
First-Aid	½
Playground Problems	1
Gymnastics	5
Recreational (Games and Athletics).	4
Dancing	2
Aquatics	1
Practice Teaching	2

Seniors.	Hour.
Kinesiology and Applied Anatomy	½
Psychology	1
Physiology of Exercise	1
Physical Diagnosis	½
Remedial Gymnastics	1
Anthropometry	½
Preventive Medicine	2
Theory of Physical Education	1
Class Management and Teaching	1
Organization and Administration	1
Child Welfare	1
History, Phy. Education	½
Gymnastics	3½
Recreational (Games and Athletics).	3
Dancing	3
Aquatics	1
Practice Teaching	3
Remedial Gymnastics & Massage	1

The hours as stated indicate sessional hours, one hour equalling thirty periods.

THEORY.

JUNIORS.

Physics. Professor Reilley, Miss V. Henry. 1 hour.

This course will be specially adapted to problems in Physical Education.

Mechanics:—Units of length, mass, time, angles, translation, velocity, momentum, acceleration, force, moments' rotation, elasticity, work, energy, activity. Laws of friction, general properties of matter, molecules and atoms, gases, solids, liquids, surface tension, solutions, diffusion, osmosis, evaporation, dew-point, statics of liquids and liquid pressure.

Sound:—Sources, propagation and conduction of sound, resonance, interference, pitch, loudness, quality, human ear.

Heat:—Units of heat, measurement, change of state, temperature, specific heat, conduction and convection, mechanical equivalent of heat.

Electricity:—Units of current, potential, resistance, magnetism, generators, effects of a current, electrical instruments.

Light:—Production of waves, velocity of propagation, photometry and illumination, colour. Laws of reflection and refraction, mirrors, lenses, optical instruments, defects of vision.

Chemistry. Dr. MacLean, 1 hour.

Matter, physical and chemical changes. Elements, Compounds, Mixtures, Phenomena of Combustion, Respiration.

Oxygen, Hydrogen; Water and laws of chemical combination. Valence, Chemical equations and calculations. Gas laws; Diffusion, Atomic and Molecular Theories. Nitrogen and Compounds. Composition of the Atmosphere.

Solutions; Acids, Bases, Salts, and Neutralization. Hydrolysis, Theory of Solution, Electrolysis, Osmosis. Halogens and compounds. Sulphur and compounds. Carbon and compounds. Phosphorus, Arsenic and Antimony. Metals and non-metals. In addition to the above there will be included the chemistry of compounds met with in ordinary daily routine.

A series of lectures will be given on Organic chemistry embracing types of Homologous series of compounds, and Alcohols, Aldehydes-Ethers, Acids, Esters, Fats, Soaps, Amines, Amino Acids, Protein, Carbo. hydrates, Alkaloids, Oxidations and Reductions in the animal body, etc,

General Anatomy and Physiology. Professor Simpson. 3 hours.

The purpose of this course is to give the student a clear conception of the human body as a *living mechanism*, in which the function and struc-

ture are inseparably related, and in which the activities of all parts are intimately co-ordinated. As far as possible, therefore, the anatomy and physiology of the various organs and systems are considered together.

After an introductory study of the structure of the body as a whole, the great vital phenomena which distinguish all living organisms are considered and a detailed analysis made of the way in which they are exemplified in man.

In this way the various processes which go to make up the life cycle are taken up; the processes of ingestion, digestion, absorption, assimilation catabolism, respiration, excretion, irritability and conductivity, movement and reproduction,—and the structure of the organs concerned in these functions studied.

Osteology and Myology. Dr. Harvey. 1 hour.

This course comprises a detailed description of bones, articulation and muscles with special reference to their functions, principles of leverage as applied to muscular action, study of joint movements, surface anatomy, demonstrations with aid of skeleton and models.

Voice Development and Training. Mr. D. M. Herbert. Half-hour.

Special exercises and individual practice in breath control, enunciation, articulation, tone projection, ability to control and conserve the voice in giving commands, instruction, and in public speaking.

Theory of Physical Education. Dr. Lamb, Miss Cartwright. Miss Mac Callum, Miss Wain. 1 hour.

In this course various types and methods of exercise will be studied, *e.g.*, marching, formal, rhythmical, mimetic, hygienic, remedial, corrective, apparatus work, recreational, games, athletics and aquatics. The place in the general plan of Physical Education and the educational value of each type will be carefully considered.

Study of fundamental and derived gymnastic positions. Common faults.

Rules for choice of various exercises for different types of classes, different ages and different stages of physical and mental development. The adaptation of gymnastics to special conditions, climate, season, special activities, etc.

Analysis of muscular action involved in gymnastic exercises. The place of physical education in the School and College in a wide scheme of Education.

Class Management and Teaching. Miss Cartwright, Miss MacCallum, Miss Wain, Mr. Van Wagner, Dr. Lamb. 1 hour.

This course comprises a study of the various methods of grading and selection of material, teaching, terminology, etc.

Construction of Gymnastic lessons.

Physiological and psychological progression for various ages and types of general gymnastics, ornamental and military marching tactics, marching variations, jumping exercises, athletics, dancing, aquatics and apparatus work.

Commands, order movements, class arrangements, special activity exercises, methods of correction, personality of teacher, etc.

First Aid. Dr. Tees. Half-hour.

The endeavour in this course is to give the student a thorough practical knowledge of the correct action to take in cases of emergency.

The treatment of burns, scalds, sprains, dislocations, fractures, shock, hemorrhage, poisoning, etc., also the various kinds and uses of bandages, splints, antiseptics, etc., are carefully considered.

Successful students qualify for the certificate of the St. John Ambulance Association.

Playground Problems. Dr. Lamb, Miss Lorna Kerr. 1 hour.

This course will relate the psychological principles to the actual activities of child life and the types of activity best suited for children of varying ages and development; theories of play, etc.

The various phases of playground activities will be specially considered; individual, group and mass athletics, gymnastics, dancing, games, singing, pageants, festivals, story-telling, hand work, raffia, basketry and kindergarten methods.

Special consideration will be given to playground organization, supplies, equipment and management.

Actual practical work and visits to grounds will be conducted.

SENIORS.

Kinesiology and Applied Anatomy. Dr. Harvey. Half-hour.

This course will consist of a general review, by means of lectures and demonstrations, of the mechanics of movement of the human machine.

Classification and analysis of exercise, joint-movements and the action of muscle groups in producing motion.

Psychology. Dr. Tait. 1 hour.

A brief outline of general psychology with special reference to relation between mind and body, and some of the more important principles of educational psychology.

Physiology of Exercise. Dr. Lamb. 1 hour.

The object of the course is to study by lectures and practical demonstrations the effects of exercise on the various parts of the body.

The physiological effects of the various types of exercise, muscular contractions and massage. Exercises of speed, strength, endurance, skill, static, rythmical and mechanical exercises and their effect upon the neuro-muscular system, metabolism, respiration, circulation, etc.

The work in this course will supplement and apply the problems studied in Physiology to the working power of the human machine, and energy, work, overwork, fatigue, second wind, breathlessness, exhaustion, recovery, training, muscular soreness and co-ordination, and tests for condition will be studied; thereby enabling the student to understand the underlying principles and to use expert judgment in the selection of the best methods of exercise to employ.

Physical Diagnosis. Dr. Harvey. Half-hour.

Lectures and practical demonstrations in the methods of examination for defects of posture and development, especially of the spine and thorax. Description of the deformities due to disease. Examination by inspection, palpation, percussion, auscultation by use of the stethoscope to determine the condition of the heart and lungs. Tests for sight, hearing, nasal obstruction. Examination for dental defects, enlarged tonsils and adenoids.

Actual demonstrations will be conducted to enable the students to recognize early contagious infections, the more common defects, and when to seek expert advice. Practice in methods of examination will be carried on under supervision.

Remedial Gymnastics. Dr. Harvey. 1 hour.

Description of the various postural defects and other abnormalities of development, such as round shoulders, spinal curvature, torticollis, flat feet, and their cause.

Lectures, demonstrations and practice in treatment by corrective exercises will be given with special attention to the abnormal conditions found among school children and the preventive measures indicated. A consideration of conditions amenable to treatment by massage will be given in this course. Practical work with individual instruction will be carried out at the clinics of the out-patient department of the Montreal General Hospital.

Anthropometry. Dr. Harvey. Half-hour.

This course will include the application of measurements and tests to determine the size, state of development and function of the body. Comparative study of types with reference to effect of age, sex, race, occupation and environment. Measurements which indicate adaptability

for various forms of work or exercise and the relation to vital capacity and endurance. Demonstrations of the use of anthropometric instruments for size and bodily proportions, and to determine strength and range of movements. Graphic methods of representation illustrated, and the use and method of preparing tables of percentages. Actual practice in the use of the above methods will be conducted throughout the course.

Preventive Medicine. Dr. Starkey, Miss Cartwright. 2 hours.

The study of Preventive Medicine is taken up under the following heads:—

(a) *Bacteriology and Serology.*

Lectures and demonstrations are given in the study of the more common pathogenic organisms and communicable diesases. Their relation to health is considered in air, water, food, clothing, skin, hair, mouth, etc. Precautions against and means of combatting pathogenic organisms are studied in, e.g., sterilization, disinfection, pasteurization, vaccination immunization and general prophylaxis.

(b) *Personal Hygiene.*

A consideration of the functions of the body, its environment, the responsibility of the individual and the means by which health is maintained. The care of the body, sleep, bathing, food, clothing, etc. Problems in sex hygiene of children, adolescents and social hygiene are discussed.

(c) *Public and School Hygiene.*

Health organizations and the means for the maintenance of health. Occupational diseases and the effect of various occupations on health. Sanitation, light, heating, ventilation, water supply and drainage, schoolroom inspection, etc.

Theory of Physical Education. Miss Cartwright, Miss MacCallum, Miss Wain, Dr. Lamb.

A continuation of the course outlined for Juniors.

Class Management and Teaching. 1 hour.

A continuation of the course outlined for Juniors.

Organization and Administration. Dr. Lamb, Mr. Powter, 1 hour.

This course comprises a study of various problems in organization and administration, from arranging a simple schedule of competitive events to the organization and supervision of a Department of Physical Education.

Actual visits to study organizations of various types will be made under supervision.

Athletics: Arrangement of schedules, athletic meets, entry blanks, duties of officials, reports and records of games, group activities, classification of competitors. Governing bodies. Ethics of sport.

Gymnasium: Construction, equipment and care, locker rooms, swimming pools, municipal baths. Office management; correspondence, filing, reports. Committees, meetings, purchasing supplies, budget, maintenance and repair.

Public and High Schools, Colleges: Medical examinations and records, prescribed work, elective athletics, credits, penalties, leaders, recess, leagues, intra and extra-mural activites, health programmes relation to grade teachers, Supervisors, Principal, School Boards and other Schools.

Social Agencies and Organizations: Related forces, Y.M.C.A., Y.W.C.A. Settlements and Club organizations with voluntary activities.

Summer Camps: Organization, preparation, site, housing, equipment, supervision, activities, trips.

Winter Sports and Carnivals: Ski-ing, snowshoeing, tobogganning, skating.

Child Welfare. Mr. Falk. 1 hour.

Influences necessary to the normal development of the child in its home, at school, at play, and at work; the treatment of Dependent, Neglected, Delinquent, and Defective Children; Child Welfare Legislation, Organizations, etc.

History of Physical Education. Miss Cartwright. Half-hour.

This subject covers the history of ancient, mediaeval and modern Physical Education. The games and athletics of the Greeks and Romans, the decline of the middle ages and the revival during the Renaissance. The various modern systems, the rise and development of play and recreation and the influence of present day methods on the mental and moral condition of the race.

PRACTICE.

Juniors and Seniors.

General Gymnastics:

Miss Cartwright, Miss MacCallum, Miss Wain, Dr. Lamb, Dr. Walsh, Mr. Van Wagner, Mr. Powter, Mr. Shaughnessy, Mr Furey. 14½ hours.

The practical courses are planned to enable the student to gain not only an adequate knowledge of the numerous actvities in Physical Educa-

tion, but also to attain a moderate degree of skill in each type and to be able to intelligently teach and direct physical activities.

The student is made thoroughly familiar with the broad underlying principles of practical work and is furnished with *ideals* and *ideals*, thereby facilitating the application to any conditions which may arise in the teacher's field of endeavour.

Military and Fancy Marching Tactics :

Methods for handling large and small groups, marching variations, etc.

Formal and Free Gymnastics. Light and Heavy Apparatus :

The formal work in the gymnasium includes free and apparatus work which is carefully graded to ensure harmonious development for all ages and both sexes.

Carefully graded exercises on the apparatus includes work on the Side and Long Horse, Buck, Ropes, Poles, Boom, Balancing Beams, Ladders, Rings, Horizontal and Parallel Bars, Elephant or Box, Stall Bars, Chest Weights; Dumb-bells, Wands, Clubs, etc.

Students begin by practicing simple and fundamental methods in class under supervision, finally leading up to advanced movements requiring special skill.

Corrective :

Special corrective and posture exercises.

Hygienic :

Exercises producing a maximum of effort in a short time, thereby stimulating organic vigour.

Group Activities :

Tumbling, Pyramids, etc.

Recreational; Games and Athletics :

The fundamental elements of running, throwing, jumping, climbing, dodging, as they apply to the simple kindergarten games, leading up to the highly organized indoor and outdoor activities for both sexes.

Special subjects in this course may be taken in conjunction with "Playground Problems," thus forming an excellent preparation for those desirous of conducting Playground or Settlement activities.

Seniors are taught how to coach; judge; rules of competition; how to meet practical problems in the control of games and athleicts.

Kindergarten Games	Dancing
Simple games for all ages	Tennis
Captain Ball	Ice Hockey
Dodge Ball	Lacrosse
Volley Ball	Soccer
Basket Ball	Track and Field Athletics
Indoor Base Ball	Winter Sports

Dancing :

This course includes Social, Folk, National, Aesthetic, Interpretative and Rythmical Dancing. Technique and theory are included and students are instructed how to teach dancing as a branch of Physical Education.

Aquatics. Miss , Dr. Lamb.

There is an increasing demand for teachers who can specialize in this activity.

Methods of individual and class instruction of breast, back, side, crawl and Trudgeon strokes. Diving. Life Saving, methods of release, rescue and resuscitation. Water Polo. Aquatic meets, etc.

Practice Teaching. Miss Cartwright, Miss MacCallum, Miss Wain, Mr. Powter. 2½ hours.

Great stress is laid on the practice of class teaching for gymnastics, games and dancing. Students are required to submit tables of exercises and then to teach same. In this way timely suggestions and criticisms are offered as experience is being gained in the practical application of the principles of Physical Education.

Students in the Junior year begin by teaching each other, and toward the end of the Session they teach classes in the Day Nursery, the Protestant Orphans' Home, etc. Senior students teach in these institutions at the beginning of the Session and in the Public Schools of the Protestant Board of School Commissioners during the last three months of the course.

Students are encouraged to take active charge of classes in Club and Settlement work throughout the Session.

Remedial Gymnastics and Massage. Dr. Harvey, Mrs. Hay, 1 hour. (Seniors only.)

(a) *Active Exercises.*

The classification and practice of movements used for remedial treatment. Construction of special tables. Actual practice in class work and then in the Hospital clinics.

(b) *Passive Exercise and Massage.*

A consideration of the theory and effects of massage with actual practice in the technique of massage manipulations. Contra-indications. Methods of treating diseases, deformities, fractures, dislocations, sprains, etc.

GENERAL STATEMENT

The establishment of the School for Graduate Nurses was made possible by the generosity of the Quebec Provincial Red Cross Society, which agreed to finance the undertaking for three years.

The School was opened in October, 1920, with a twofold object: (1) To provide training for Public Health Nursing; (2) To provide training for administrative and teaching positions in Hospitals and Schools of Nursing. Two courses, A and B, were therefore arranged, each covering a full academic year and leading to a certificate. Seven full-time students were registered in Course A and nine in Course B. In addition, 18 partial students were registered for one or more courses. Thirteen of the full-time students completed the course and received their certificates. The School has kept in touch with the majority of the class: they are doing good work in various important positions.

The second year of the School for Graduate Nurses showed progress that is most encouraging. There were twenty-two full-time students: of these eight were registered in Course A, Public Health Nursing; ten in Course B, Teaching in Schools of Nursing; and four in Course C, Administration in Schools of Nursing.

Miss Elizabeth Smellie was secured as instructor in public health nursing and supervisor of field work. She is a graduate of Johns Hopkins Hospital School of Nursing, and of the course in public health nursing conducted by Simmons College and the Instructive District Nursing Association of Boston, Mass. Other changes of value were made. In place of the student sharing classes in Anatomy and Physiology and in Preventive Medicine, organized for students of the Physical Education Department, as was first the case, special courses in these subjects, with good laboratory work, are now given by Professor Simpson and Professor Starkey of the Medical Faculty. Owing to closer co-operation with the City Department of Health and the Victorian Order of Nurses, better opportunities for field work in public health nursing have been secured. Further improvements in the various courses are being arranged for the session of 1922–23.

AIMS OF THE DEPARTMENT.

The courses offered in the School for Graduate Nurses are designed to prepare qualified nurses to act as instructors, supervisors, assistants, and superintendents in training schools for nurses; as superintendents of small hospitals; and as public health nurses. The hope and aim of the School is to send out teachers and leaders who, whether by helping to improve the methods and raise the standards of nursing education in Canada, or by doing efficient work in the varied fields of public health nursing, may alike serve the community as health workers.

COURSES OFFERED IN THE SCHOOL FOR GRADUATE NURSES.

A.—Public Health Nursing.

This branch of nursing is developing all over Canada. Five courses have already been established to prepare graduate nurses to meet the increasing demand. These are being given at the following Universities: Dalhousie, Western, British Columbia, Toronto and McGill. The field of Public Health Nursing is ever widening, the interest of such work is beyond question, and the need of qualified workers is very great. In addition to visiting nursing, which is the oldest branch of this work, there are school nursing, infant welfare work, industrial nursing and social and mental hygiene work and many other activities, all concerned with the prevention of disease, and the promotion of better standards of health. The opportunities offered are indeed world-wide.

Hospital training is not in itself sufficient to meet these new demands; the work is largely preventive, social and educational in character, and hospital training has been chiefly of a remedial nature.

PROGRAMME OF STUDY

Required:—

Elementary Psychology.
History of Nursing
Principles of Public Health Nursing
Child Hygiene.
Control of Communicable Disease.
Neuro-Psychiatry.
Preventive Medicine.
Bacteriology.
Special Fields of Public Health Nursing.
Principles of Modern Social Work.
Principles of Teaching.
Nutrition.
Field Work in Public Health Nursing.

Electives:—Social Psychology, Home Economics, Chemistry, Industrial History, Child Welfare, Physical Diagnosis.

B.—Teaching in Schools of Nursing.

The need of qualified instructors for Schools of Nursing is being very generally realized as the necessity for improved educational methods in the training of nurses becomes increasingly apparent. The demand for such instructors is, however, in excess of the supply.

PROGRAMME OF STUDY

Required:—

Elementary Psychology.
Educational Psychology.
Principles of Teaching
History of Education.
Teaching in Schools of Nursing.
Supervision in Schools of Nursing.
History of Nursing.
Anatomy and Physiology.
Preventive Medicine and Bacteriology.
Special Fields of Public Health Nursing.

Electives:—Materia Medica, Nutrition, Physics, Neuro-Psychiatry, Abnormal Psychology, Chemistry.

C.—ADMINISTRATION IN SCHOOLS OF NURSING.

This course is planned to prepare experienced women of superior qualifications for positions as superintendents in Schools of Nursing, or superintendents of small hospitals.

PROGRAMME OF STUDY

Required:—

Elementary Psychology.
Principles of Teaching.
History of Nursing.
Supervision in Schools of Nursing.
Administration in Schools of Nursing.
Current Problems in the Education of Nurses.
Hospital Administration.
Preventive Medicine.
Nutrition.

Electives.—Home Economics, Abnormal Psychology, Neuro-Psychiatry, Bacteriology.

Students completing the requirements of both courses B and C are entitled to a certificate in Teaching and Administration in Schools of Nursing—or courses B and C, with electives, can be taken as a two-year course leading to a diploma in Teaching and Administration in Schools of Nursing.

ADMISSION REQUIREMENTS AND REGULATIONS.

Nurses desiring to enter any course given in the School for Graduate Nurses must present:—(a) Evidence of a complete high school education or of an equivalent which is adequate to the requirements of the University; (b) evidence of the satisfactory completion of a course in a Nurses' Training School of approved standards connected with a hospital of at least fifty beds and covering a complete general training of at least two years. Nurses must be registered when coming from State or Province where registration is in force, and must be eligible for membership in the Canadian National Association for Trained Nurses.

In addition to the above, any nurse wishing to take the course in Hospital and Training School Administration must present definite evidence that, after graduation, she has held satisfactorily for a reasonable period of time some position which has demonstrated her fitness for responsible executive work of this kind.

As the work demands continued and concentrated effort, students must be in good physical condition, and must present a medical certificate to that effect.

Partial Students:—Qualified nurses may register for one or more courses in any term, with the consent of the director.

Applications for admission should be made during the spring and early summer, if possible. For application blanks and further information, write to the Director, School for Graduate Nurses, McGill University.

FEES AND DEPOSITS.

The fee for any certificate course is $100.00 a year, to be paid by October 10th, or payable in two instalments of $51.00 each, to be paid by October 10th and February 1st.

For Partial Students the fees are as follows:—

For a full course of one lecture a week during the College year....	$ 7.50
For a half-term course.....	5.00
For a course of two lectures weekly.....	15.00
" " " " 3 or 4 " "	25.00

Special fee for courses which include Laboratory work.

Regular students, as in all departments of the University, pay, in addition, a $3.00 athletic fee.

A deposit of $5.00 caution money is required from all regular students.

LIBRARY.

Regular students will have the privilege of using the Libraries of the University.

SCHOLARSHIPS.

Scholarships are being offered for 1922–23 by the Association of Registered Nurses of the Province of Quebec, and a number of hospitals are providing annual scholarships for their own graduates. Among these are the Royal Victoria Hospital, Montreal General Hospital, Hamilton General Hospital, Hospital for Sick Children, Toronto, Jeffrey Hale's Hospital, Quebec.

The Victorian Order of Nurses for Canada offers scholarships of $400.00 each to graduate nurses who wish to avail themselves of a post-graduate course in public health nursing at the Universities of Vancouver; B.C., Toronto and London, Ont., McGill, Montreal, Que., and Dalhousie, Halifax. Nurses accepting scholarships will be expected to remain in the service of the Victorian Order for one year upon successful completion of the course, at prevailing salaries.

REGISTRATION.

Registration begins September 20th, and the opening lecture will take place Monday, October 2nd. Nurses will consult the Director at time of registration.

EXAMINATIONS.

Examinations are held in some subjects at the end of the first term, and final examinations are held in April and May. The School closes at the end of May.

RESIDENCE.

A limited number of students may be accommodated at the Hostel of the Department of Physical Education. Hostel students have their meals at the Royal Victoria College, which is in the vicinity. Addresses of boarding houses may be had from the Director.

EXPENSES.

A statement of average expenses for the academic year is as follows:—

University fees	$103.00 to $40.00
Books	20.00 " 40.00
Room (30–32 weeks)	175.00 " 225.00
Board	225.00 " 300.00
Incidentals	30.00 " 40.00
Average total	$550.00 "$700.00

REQUIREMENTS FOR CERTIFICATES OR DIPLOMAS.

A certificate course requires fourteen hours weekly or the equivalent. (Two hours laboratory or four hours field work equals one hour lecture.)

Certificates are awarded to students who obtain an average mark of 50 in all examinations and not less than 40 in any one written examination.

Students doing field work must also receive satisfactory reports from the agencies with which their field work has been taken.

The diploma of the School for Graduate Nurses is awarded to students on the satisfactory completion of a two-year course in teaching and administration. (See Courses B and C.)

VACCINATION.

All students entering the University for the first time are required to present a certificate, or other satisfactory evidence of successful vaccination, failing which, they shall at once be vaccinated in a manner satisfactory to the authorities.

COURSES OFFERED 1922–23

1. Supervision in Hospitals and Training Schools.

Lectures, conferences and excursions:—Course designed for teachers and supervisors who require a general knowledge of organization and administration in hospitals and training schools. It deals with the relation of departments to each other, and with the ordinary problems of management of practical training of student nurses, and the preparation of ward

records and reports.

One hour.....Miss Shaw and Miss Samuel.

2. Principles of Hospital Administration.

Lectures and field work:—The particular problems of hospital administration and housekeeping, the furnishing and equipment of wards and other departments; organization of service in each; duties, salaries and conditions of life and work; province and duties of heads of kitchens, laundries, linen and supply rooms, and the handling of goods, linen, household and surgical supplies.

One hour, 2nd term.....Dr. Haywood.

2a. Round Table Conference on Hospital Administration.

One hour, 2nd term.....Miss Shaw.

3. Administration on Schools of Nursing.

Lectures, conferences, and observations:—This course deals with the problems of training school organization in connection with hospitals of general types or under other forms of government. It deals with the general problem of training-school management; the qualifications, personality, and training of superintendent or principal; her general duties and responsibilities on the administrative side; the arrangement, control, and supervision of practical work, in wards or other hospital departments; the appointment and direction of assistants and ward staff.

Two hours.....Miss Shaw and Miss Samuel.

4. Teaching in Schools of Nursing.

Lectures and conferences:—This course deals primarily with the curriculum of the nursing school, outlining the aims to be achieved through the course of study, the selection and arrangement of subjects in the curriculum, the general content of each, the special methods of teaching suitable in the various subjects, the selection and use of text and reference books, and other teaching materials.

Two hours.....Miss Shaw.

4a. Teaching in Schools of Nursing—Observation and Practice Teaching.

One hour, 2nd term.....

5. Current Problems in the Education of Nurses.

Lectures-Readings:—This course deals with special problems in education peculiar to training schools for nurses. The question of entrance requirements, hours of practical work, health and social aspects of student life are considered.

One hour, 2nd term.....Miss Shaw.

6. Principles of Public Health Nursing.

(a) Lectures-Recitations. (b) Excursions and Conferences:—Intended to give a general grasp of the nursing problems to be met with in private

families; the measures to be followed to relieve immediate needs; and to teach hygiene, preventive methods, and the handling in the home of acute chronic, or communicable disease. The organization and supervision of the various types of public health nursing are also considered.

Three hours.....Miss Smellie.

7. Special Fields in Public Health Nursing.

This course is devoted to the problems of tuberculosis work, school nursing, pre-natal, maternity, social hygiene and other special types of public health work.

One hour.....Special Lectures.

8. History of Nursing.

Illustrated Lectures, Reading:—Deals with the origin and historical development of nursing under monastic, military and secular control—Florence Nightingale, her successors, modern nursing in various countries—nursing in the Great War—Red Cross activities.

One hour.....Dr. Abbott and Miss Shaw.

9. Materia Medica.

Lectures and demonstrations:—This course includes a discussion of drugs, their sources, crude forms, and preparation, with laboratory demonstrations; proper methods of administration, with physiological, therapeutic, and toxic action; their dosage, cost, and care; practical problems in weights and measures, and in the preparation of solutions.

One hour.....Mr. A. B. J. Moore.

10. General Anatomy and Physiology.

The purpose of this course is to give the student a clear conception of the human body as a *living mechanism*, in which the function and structure are inseparably related, and in which the activities of all parts are intimately co ordinated. As far as possible, therefore, the anatomy and physiology of the various organs and systems are considered together.

After an introductory study of the structure of the body as a whole, the great vital phenomena which distinguish all living organisms are considered and a detailed analysis made of the way in which they are exemplified in man.

In this way the various processes which go to make up the life cycle are taken up; the processes of ingestion, digestion, absorption, assimilation, catabolism, respiration, excretion, irritability and conductibility, movement and reproduction—and the structure of the organs concerned in these functions.

3 hours lectures and demonstrations.....Prof. Simpson.

11. Physical Diagnosis.

Lectures and practical demonstrations in the methods of examination for defects of posture and development, especially of the spine and thorax; description of the deformities due to disease; examination by inspection, palpation, percussion, auscultation by use of the stethoscope to determine the condition of the heart and lungs; tests for sight, hearing, nasal obstruction; examination for dental defects, enlarged tonsils and adenoids.

Actual demonstrations will be conducted to enable the students to recognize early contagious infections, the more common defects, and when to seek expert advice. Practice in methods of examination will be carried on under supervision.

Half-hour.....Dr. Harvey.

12. Nutrition and Cookery.

Lectures, recitations, and laboratory work—elements of nutrition and dietetics:—This course describes very simply the essentials of an adequate diet, and the nutritive properties of common food materials. The application of such knowledge to the feeding of individuals and family groups is discussed with special reference to limitations of cost. Estimations of food values and preparation and service of practical dietaries constitute the laboratory work.

Two hours.....Miss Cruise.

13. Chemistry.

Matter, physical and chemical; changes; elements, compounds, mixtures, phenomena of combustion; oxygen, hydrogen; water and laws of combination; atomic theory; chemical equations and calculations; gas laws; molecular weights; nitrogen and compounds; atmosphere—composition, pressure; diffusions; solutions; neutralization; acids; bases; salts, valence; sulphur and its compounds; carbon and its compounds; arsenic; antimony; metals and non-metals; the chemistry of compounds met with in ordinary daily routine. In addition, a series of lectures will be given on organic and physical chemistry.

Lectures and demonstrations.....Dr. MacLean.

14. Preventive Medicine.

Two hours.....Dr. Starke.

The study of Preventive Medicine is taken up under the following heads:—

(a) *Bacteriology and Serology.*

Lectures and demonstrations are given in the study of the more common pathogenic organisms and communicable diseases. Their relation to health is considered in air, water, food, clothing, skin, hair, mouth, etc. Precautions against and means of combating pathogenic organisms are studied in, e.g., sterilization, disinfection, pasteurization, vaccination, immunization and general prophylaxis.

(b) *Bacteriology. Laboratory Work.*

Two hours.....Dr. Macdonald and Dr. Jones.

Classes and laboratory work:—Use of microscope, moulds, yeasts, bacteria, media, bacteria and diseases, bacteriology of milk and water; defences of the body against pathogenic bacteria; applications of bacteriology.

(c) *Personal Hygiene.*

A consideration of the functions of the body, its environment, the responsibility of the individual and the means by which health is maintained; the care of the body, sleep, bathing, food, clothing, etc. Problems in sex hygiene of children, adolescents and social hygiene are discussed.

(d) *Public and Social Hygiene.*

Health organizations and the means for the maintenance of health; occupational diseases and the effect of various occupations on health; sanitation, light, heating, ventilation, water supply and drainage, schoolroom inspection, etc.

15. Child Welfare.

Influences necessary to the normal development of the child in its home, at school, at play, and at work; the treatment of dependent, neglected delinquent and defective children; the child of the unmarried mother; child-welfare legislation.

One hour.....Mr. Falk.

16. Child Hygiene.

Principles of pre-natal care; prevention of blindness; importance of breast feeding; infant welfare clinics; the pre-school age child; detection of physical defects; oral hygiene; child welfare and health centre work.

One hour, 1st term.....Dr. Chandler.

17. Control of Communicable Disease.

Lectures, clinics, and excursions. The course, designed for nurses in public health work, deals with methods of applying modern scientific medical knowledge in the prevention of disease. It considers the causes of prevalent communicable disease, such as tuberculosis, typhoid fever, scarlet fever, diphtheria, and the venereal diseases; measures for prevention and methods of control and care.

One hour, 2nd term.....Dr. Cushing and special lecturers.

18. The Treatment of Poverty.

Poverty and Social Life:—Historical review; the family, a normal standard of life; factors in the breakdown of family life, individual and social; machinery for dealing with poverty, public and private; the scientific basis for social work.

Social Case Work:—Value of evidence; planning rehabilitation; the use of volunteers; co-ordination of effort; case conferences.

How to Help Various Types:—Widows, deserted women, the aged, etc., etc.

Community Effort.—Social insurance, legislation; conditions in industry.

Two hours.....Lecturer to be appointed.

19. Industrial History.

History of the guild; the domestic system of manufacture; the factory system; the industrial revolution, and the rise of the trade union in England and North America; various industrial theories explained; co-operation and joint industrial councils, organization, wages, hours, education, the trust, etc.

One hour.....

20. Home Economics.

Household management, the dietetic and caloric value of food; economy in buying; economical menus.

One hour, second term.....

21. Neuro-Psychiatry and Mental Hygiene.

Definitions of fallacious sense perceptions, such as hallucinations, illusions, delusions; different types of mental diseases, symptoms, causes and treatment of; mental deficiency; epilepsy; differential diagnosis of organic and functional nervous diseases; juvenile delinquency; the psychopathic personality; relation of psychiatry to industry; relation of social work to psychiatry; history and case record making.

In connection with the course, students will have the opportunity to witness clinical examinations and tests at the Psychiatric Clinic, Royal Victoria Hospital.

One hour.....Dr. Mundie.

22. Elementary Psychology.

Lectures, recitations and exercises.

Two hours.....Dr. Tait

23. Social Psychology.

Lectures; prescribed readings and reports.

Two hours.....Dr. Tait

24. Abnormal Psychology.

As in Fourth Year Medicine

Two hours.....Dr. Tait.

25. Educational Psychology.

Two hours.....Dr. Tait.

26. Principles of Teaching.

The aims of education for the individual, society, nursing schools; when and how do pupils really learn?; education as habit formation; the training of memory; how can we test the progress of learning?; how do pupils get hold of new ideas?; how can we get our pupils to pay attention?; how can we get vivid impressions on our pupils' minds?; the fine art of questioning; how to make a lesson plan; types of teaching; what part can other pupils play in teaching?

One hour.....Dr. Best.

27. History of Education.

The purpose of the course is to present the essential features of the educational thought of the past as this has been shaped by economic, social, political, and religious causes.

One hour.....Dr. Best.

28. Field Work in Public Health Nursing.

Excursions, observations and practice work. This work is arranged with various health organizations as follows:—

(a) Hospital social service, in the Social Service Departments of the Royal Victoria Hospital, Montreal General Hospital, Children's Memorial Hospital, and Western Hospital.

(b) School nursing with the city school nurses, by courtesy of the Department of health.

(c) Child Welfare work with the settlement, baby welfare stations, dispensaries, etc.

(d) Visiting nursing with the local branch of the Victorian Order of Nurses. One month.

For the work with the Victorian Order of Nurses it will be necessary for each student to provide herself with a wash dress, long coat, and plain hat.

4 hours.

MILITARY TRAINING

Canadian Officers' Training Corps.
(McGill University Contingent,)

Honorary Colonel:—General Sir A. W. Currie, G.C.M.G., K.C.B., LL.D.

In order to train undergraduates that they may become men fitted to hold His Majesty's Commissions, a contingent of the Canadian Officers' Training Corps was organized at McGill University two years before the Great War. The contingent is a unit of the Active Militia, being governed by special regulations, under which it cannot be called out for active service as a unit. During the Great War it did splendid service, and many of its members appeared in the rolls of honour.

The training is intended to bring the largest possible number of students up to the standard required for the two certificates:—A, a Lieutenant's, that is, of a man fit to command a platoon; and B, a Captain's, that is, of a man fit to command a company. The value of these certificates lies in their showing that the candidates have satisfied a board of regular officers at practical examinations that they have developed properly their powers of command, know how to give orders to other men, can retain their self-possession, and can act promptly on their own initiative in a sudden emergency; and further that they have passed the written examinations, in which candidates must show a thorough knowledge of topography, how to organize and look after the welfare of men under their command, and so on. If a member is recommended for a commission in the Active Militia of Canada, or the corresponding military force in any other part of the Empire, the possession of one of these certificates entitles him to promotion to the rank denoted, as soon as there is a vacancy, without any further examination, and also to certain other advantages. To obtain a Certificate A (Lieutenant's) a member must complete one year's efficient service in the corps, and in the case of Certificate B (Captain's) two years efficient service, and pass these practical and written examinations, which are held under the auspices of the Imperial and Dominion Governments conjointly, for the whole Empire at the same time. The written papers are set and corrected by military experts in London, England, for the whole Empire.

To be efficient in a given year (1st August to 1st July), a member must have attended 40 parades if in his first year of service, or 25 parades if in a subsequent year, and must have completed the prescribed course of musketry. The time required is about two hours per week each session.

and rifle-practice is encouraged. For the Session 1922-23 the unit will have its own rifle-range and quarters.

Each member upon joining the contingent will be required to deposit the sum of $5.00 with the Adjutant; for which a receipt will be given. This money will be refunded if the member becomes efficient; otherwise it will go into the funds of the contingent.

The training in the corps is of such a nature that all students are recommended to join. Enlistment is, however, purely voluntary.

THE UNIVERSITY LIBRARY.

G. R. Lomer, M.A., Ph.D., Librarian.

The University Library is under the general management of a Committee of Corporation, consisting of the Principal, Chairman; the Librarian, Secretary; two members of the Board of Governors, one Representative Fellow, appointed by Corporation; two representatives of the Faculty of Arts, elected by the Faculty; one representative of each of the Faculties of Applied Science, Law and Medicine, elected by their respective Faculties; and four other members appointed by Corporation.

The several libraries of the University now contain over 180,000 volumes and 31,000 pamphlets, considerable collections of maps and photographs, and a number of the rarer and more costly monographs and serials which are indispensable for purposes of research. The Library now receives over 1,100 periodicals, Government publications and transactions of various literary and scientific societies.

Among the special collections possessed by the Library may be mentioned the Mendelssohn Choir Memorial Collection of works on Music, the T. D. King Collection of Shakespeariana, the Redpath Historical Collection, and the Collection of Canadiana. The nucleus of the latter is formed by the choice library of the late Mr. Frederick Griffin, which he bequeathed to the University about forty years ago. It has been growing ever since, and includes, at the present time, besides numerous manuscripts, an interesting collection of Canadian portraits and autographs, recently increased by a gift from Mr. George Iles. The Canadiana have been further enriched by the recent gift of over 270 volumes and 50 pamphlets from the library of the late Mr. William McLennan, presented in his memory by his children. The library now has an extensive collection of bookplates in process of being classified and mounted.

The Redpath Historical Collection was begun by the late Mr. Peter Redpath soon after he became a Governor of the University. It received substantial yearly additions from him up to the year of his death, after which it was steadily augmented by his widow during the remainder of her life. It is now large and valuable, and affords excellent opportunities for the study of history. Its most striking feature—a series of political, religious and social tracts, for which the first selections were made by the late Professor Henry Morley—was greatly enriched by the late Mrs. Redpath and at the present comprises about 10,000 brochures, dating from 1600 A.D. to the end of the nineteenth century.

A special Architectural collection, known as the "Blackader Library of Architecture," has been established in honour of Captain Gordon Home Blackader, B.Arch. (McGill), who was wounded near Ypres on June 2nd, 1916, and died in London on August 20th of the same year.

"The Emma Shearer Wood Library of Ornithology" was presented by Colonel Casey A. Wood, M.D., as a special research collection and reference library rich in periodical and pamphlet materials, for use by all who are interested in birds.

"The Blacker Library of Zoology" is being presented by Robert Roe Blacker and Nellie Canfield Blacker as a comprehensive reference library on this special subject. In addition to standard works it includes a number of monographs and an extensive collection of reports of scientific voyages and periodicals.

These three collections are now housed in the recently completed addition to the library and are provided in each case with a reading-room adjacent to the new steel stacks which are devoted to these special libraries.

The Barnes Collection of books on Physics is shelved with the Departmental Library in the Physics Building. The School of Commerce, the School for Graduate Nurses and the Department of Social Service are beginning to make collections of books on their special subjects.

Founded in 1900, as a memorial to the late Mr. Hugh McLennan from his children, the Travelling Libraries of McGill University were endowed in 1911 by their founders. These libraries contain, each, from thirty to forty carefully selected volumes; and are sent, on application, and on payment of a nominal fee of $4.00, to schools, to country libraries, to reading clubs, and to small communities which possess no public library. Pictures, lantern slides and lectures are also supplied by this department. Regulations and full particulars may be obtained from the Librarian of the University. Provision has also been made to supply books by mail to graduates of the affiliated theological colleges and to ministers who have not the advantage of local libraries.

Although the Library is maintained primarily for members of the University, the Corporation has provided for admission, upon certain conditions, of such persons as may be approved by the Library Committee. It is the desire of the Committee to make the Library as useful to the entire community as is consistent with the safety of the books and the general interests of the University.

The Library serves also as a general reference library for Montreal and has been of service in this capacity to institutions, learned societies, business houses, railways, corporations, and industrial societies. It also has a system of inter-library loans by which it sends books to other libraries and obtains for the teaching staff works not available here.

With the Library are affiliated the McGill College Book Club and the University Book Club, which supply their readers with standard, important and recent publications and make a substantial annual contribution of books to the Library.

EXTRACTS FROM THE LIBRARY REGULATIONS.

1. The University Library is closed on Sundays, and on certain other holidays, as noted in the *Calendar of Meetings*. With a few exceptions, which are posted in the Library at the appropriate time, it is open as follows:

(a) During the session, from 9 a.m. till 6 p.m. and from 7 till 10 p.m. On Saturdays from 9 a.m. till 5 p.m.

(b) During vacation, from 9 a.m. till 5 p.m. On Saturdays, from 9 a.m. till 1 p.m., except during July and August, when the Library is closed on Saturdays.

2. Students in the Faculties of Arts, Law, and Applied Science are entitled to read in the Library, and may borrow books (subject to the regulations) to the number of three volumes at one time.

3. Students in the Faculty of Medicine, who have paid the Library fee to the Bursar, may also read in the University Library, and on depositing the sum of $5, may borrow books on the same conditions as students in other faculties.

4. Graduates in any of the faculties, on making a deposit of $5, are entitled to the use of the Library, subject to the same rules and conditions as students in Arts, Law, or Applied Science.

5. Books may be taken from the Library only after they have been charged at the delivery desk; borrowers who cannot attend personally must sign and date an order, giving the titles of the books desired.

6. Books shelved in the reading-rooms or seminary-rooms must not be taken from the rooms to which they have been assigned; and, after they have been used, they must be returned promptly by readers to their proper places upon the shelves.

7. Before leaving the Library, readers must return to the attendant at the delivery desk books which they have drawn from the stack for use in the reading-room.

8. All persons using books remain responsible for them so long as the books are charged to them, and borrowers returning books must see that their receipt is properly cancelled.

9. Writing or making any mark upon any book belonging to the Library is unconditionally forbidden. Any person found guilty of wilfully damaging any book in any way shall be excluded from the Library and shall be debarred from the use thereof for such time as the Library Committee may determine.

10. Damage to or loss of any books, maps, or plates, and injury of library fixtures, must be made good to the satisfaction of the Librarian and the Library Committee.

Damage, loss or injury, when the responsibility cannot be traced, will be made good out of the caution money deposited by the students with the Bursar.

11. Should any borrower fail to return a book upon the date when its return is due, he may be notified by postal card, and requested to return the book. If the time has not been extended, or the book returned, after a further delay of at most three days, the book may be sent for by special messenger, at the borrower's expense, or may be replaced, and paid for, in the case of a student, out of the caution monies of such student; in the case of graduates or other borrowers, out of their library deposits. A fine of five cents for ordinary books and of twenty-five cents for reference books is imposed for each day that a book is overdue.

12. Before the close of each session, students must return uninjured, or replace to the satisfaction of the Librarian, all books which they have borrowed.

13. Silence must be strictly observed in the Library.

14. Infringement of any of the rules of the Library will subject the offender to a suspension of his privileges, or to such other penalty as the nature of the case may require.

THE UNIVERSITY BUILDINGS.

THE CENTRE BUILDING.

This is the oldest building of the group. It contains the lecture rooms of the Faculty of Arts, as well as the botanical and zoological laboratories and the offices of the administration.

THE CONSERVATORIUM OF MUSIC.

The Conservatorium of Music is situated at the corner of University and Sherbrooke Streets, adjoining the University grounds. On the ground floor are the offices of the Director and of the Secretary, the library and a concert hall where recitals by the staff and students are given during the session and where orchestral and choral practices are held (the more important concerts take place in the large assembly hall of the Royal Victoria College). The second and third floors contain a number of studios, where lessons are given by the various members of the staff, as well as a room for lectures in theory and history of music, sight-singing, etc. In the basement are several practice rooms.

THE MEDICAL BUILDING.

This building, erected in 1911 at a cost of over $600,000, stands at the corner of Pine Avenue and University Street. Of the central part of the building, the greater portion is set aside for the accommodation of the library, the whole of the front of the second and third floors and of the ground floor being so used. On the third floor is a large students' reading room, 76 x 24 feet, exceptionally well lighted and capable of accommodating 100 readers. On this floor also is the staff journal room and the private offices of the librarian. The second floor is occupied by the stack room, with accommodation for sixty thousand volumes, also by individual research and reading rooms. A portion of the ground floor is set aside for storage. Besides the library, the central portion of the building contains also three lecture rooms, the private museum and offices of the professor of anatomy and administration office, research and preparation rooms of the museum staffs. To the rear of the central building is the museum, probably the most complete structure of its kind in connection with a medical school on this continent. It is built in the form of a cross, three storeys high,

splendidly lighted by ample window space on three sides and by a large central light well. Each floor is furnished with free stacks and wall cases made of steel and plate glass thoroughly dust-proof. The anatomical collections are placed on the third floor, while the first and second floors are devoted to pathology. In both the anatomical and pathological sections of the museum the specimens have been prepared and classified with a view to their being made use of in the teaching of these important subjects. The east wing gives accommodation for the Departments of Anatomy, Pathology and Bacteriology, the Faculty of Dentistry, the Faculty rooms and administration offices, the mortuary and preparation room for dissecting material, as well as ample space for students' lockers and lavatories, and a large well-lighted students' reading and smoking room. On the ground floor of this wing will be found the mortuary, in which there is provision for the storage of 80 subjects, and leading from this is the preparation room. On this floor also is the large locker room, containing 400 steel lockers, the students' lavatory and the students' reading and smoking room, the latter being provided with newspapers and magazines and being under the control of the students themselves. On the first floor is the Faculty room and a series of rooms for administrative work. The northern half of this floor is occupied by the Faculty of Dentistry, comprising offices, lecture rooms, and modern, well-equipped laboratories. The second floor is wholly occupied by the Department of Pathology and Bacteriology. In the southern half is the Professor's private laboratory and office, four research and preparation rooms, a small demonstration theatre and an assistant's room. The northern half is occupied by the students' laboratory, a room 76 x 40 feet, splendidly lighted and equipped with all the necessary apparatus for modern laboratory instruction. The third floor is taken up wholly by the Department of Anatomy, and contains, besides private offices and research rooms for the Professor and staff, a large dissecting room, 88 x 40 feet, excellently lighted and fully equipped. There is also on this floor a large lavatory and students' locker room. Between the second and third floors is a mezzanine floor, which is devoted to the Department of Parasitology. Here, besides the private offices and research rooms of the Professor, there are four fully-equipped laboratories for advanced work. The west wing contains a large assembly hall. The remaining space is occupied by the Departments of Pharmacology and Hygiene.

THE BIOLOGICAL BUILDING.

The new Biological Building is constructed on up-to-date lines and provides commodious quarters for the Departments of Botany, Zoology and Pharmacology, and for an extension of the Departments of Bio-Chemistry and Physiology. The general facilities provided for in the construction are of the same nature for every Department, so that the efficient teaching of biology in all its branches is now assured.

THE MACDONALD ENGINEERING BUILDING.

This building is designed to provide accommodation for six hundred students. The Departments of Civil Engineering and Architecture are permanently provided for, while the Departments of Electrical and Mechanical Engineering are given temporary accommodation until such time as independent buildings can be provided for the growing numbers in these departments. The ground floor is given up to the civil engineering, geodetic, electrical and mechanical engineering laboratories, and is for the most part 23 feet in height. Mechanical and electrical engineering laboratories and the workshops also occupy the three lower floors of the Workman Building. The centre portion of the second floor is used for purposes of administration (faculty rooms, offices, library, etc.). The front parts of the second and third floors are occupied by eight class rooms which contain 700 seats, while the upper floors, both of the Engineering Building and the Workman Building, are devoted to drafting rooms, containing over 500 tables. The building throughout is of the most approved fire-proof construction, not only in the matter of materials, but in arrangement as well, the several floors being divided by fire walls and fire doors into separate sections. It was erected, in 1909, at a cost of about half a million dollars.

THE MACDONALD CHEMISTRY AND MINING BUILDING.

In addition to the large lecture theatre, which seats about 250 students, there are here four lecture rooms for smaller classes and a number of offices. There are also three large general chemical laboratories (each with a floor space of about 2,400 square feet and accommodation for 200 students at a time), large laboratories for assaying, ore dressing and metallurgy, with a very complete equipment, and a number of smaller rooms and laboratories for special purposes, including research work. The reference library contains about 1,400 volumes.

THE MACDONALD PHYSICS BUILDING.

This building is five storeys in height, each floor having an area of 8,000 square feet. Besides a lecture theatre and its apparatus rooms, the building includes an elementary laboratory nearly 60 feet square, large special laboratories, a range of rooms for optical work and photography, separate rooms for private work, and two large laboratories arranged for research, provided with solid piers and the usual standard instruments. There are also a lecture room for mathematical physics, a special physical library and convenient workshops.

THE UNIVERSITY LIBRARY.

This building, which is a fine example of the Romanesque style of architecture, was erected in 1892 by Mr. Peter Redpath, a Governor of the University, and was enlarged in 1900. The general reading room is 110 feet long, 44 wide and 34 high, and will seat 150 readers. The book stacks, four and five storeys in height, have a working capacity of 150,000 volumes. The Medical Library is described in the paragraph dealing with the New Medical Building.

THE OBSERVATORY.

The Observatory is equipped for instruction in the use of meteorological instruments and in astronomical work. It is the Montreal station of the Meteorological Service of Canada. Time signals are given to the city, the railways and to the shipping.

THE POWER STATION.

The new Power Station supplies heat to the following buildings: New Medical Building, Old Medical Building, Engineering and Workman Buildings, Chemistry and Mining Buildings, the Physics Building and the Arts Building. It also furnishes current for light and power to these buildings and to the Royal Victoria College, the Union and Strathcona Hall. The equipment of the station includes boilers of 1,000 H.P. nominal capacity, provision being made for future extension, and engines and generators of 600 kilowatt capacity. The coal bunkers hold 500 tons. The heating distribution is partly by tunnel and partly by underground conduit, the farthest building served being at a distance of 700 feet from the station. Electric cables are placed underground in vitrified clay conduits.

THE REDPATH MUSEUM.

The Museum occupies a commanding position at the upper end of the campus, and besides its central hall and other rooms devoted to the collection, it contains a large lecture theatre, class rooms and work rooms. The collections in botany, palæontology, geology and zoology are very fully and admirably arranged for teaching purposes.

THE ROYAL VICTORIA COLLEGE.

This is a residential college for the women students of McGill University. It is situated on Sherbrooke Street, in close proximity to the University buildings and laboratories. On the ground floor are the offices of the administration, lecture rooms, students' common room, and a spacious

dining hall. A gymnasium is fitted up in the basement. On the first floor are other lecture rooms, the library, reading room and a handsome assembly hall. The second and third floors are given up entirely to rooms for resident students. These rooms are handsomely furnished, as indeed is the whole building.

STRATHCONA HALL.

Strathcona Hall is the home of the Student Christian Association of the University. The building is 55 feet by 110 feet, and is five storeys in height. The three upper storeys are arranged to afford residential accommodation for about sixty students. On the ground floor are the secretary's office, sitting rooms, cloak rooms and a hall capable of seating 350 persons. The second floor contains a large reading room, a large game room, and five small rooms for the use of clubs and societies.

THE UNION

The McGill Union stands at the corner of Sherbrooke and Victoria Streets, within two minutes' walk of the College gates. The building measures 93 feet by 71 feet and consists of three storeys and a basement. On the main floor are the dining and luncheon rooms; on the second floor, billiard rooms, a news hall, a reading room and a library, a study and a lounging gallery (88 ft. by 21 ft.). The large hall is situated in the top storey. It measures 88 ft. by 45 ft. and has a seating capacity of 400. There are also smaller rooms for society meetings, etc. In the basement are baths, locker rooms and an exercise room (24 ft. by 38 ft.). The Union is the social centre of the University, the common meeting ground for students of all faculties. It is intended to promote a broad and true university spirit.

GEOLOGY, MINING AND METALLURGY BUILDING.

As part of the programme which has been decided upon by the Governors of the University, an additional building, to be known as the Geology, Mining and Metallurgy Building, will be erected in 1922 on the University grounds, probably fronting on University Street. This will provide adequate accommodation and a thoroughly up-to-date equipment for the Departments mentioned above. The transfer of these Departments from their present quarters in the Chemistry and Mining Building will leave this building for the exclusive use of the Departments of Chemistry and Chemical Engineering, which will thus be provided with the additional space which they now so greatly need.

LABORATORIES, MUSEUMS AND WORKSHOPS.

LABORATORIES.

BOTANICAL LABORATORIES.

The Department of Botany is housed on the first floor and in the basement of the newly-constructed biological building. The large and well-lighted elementary laboratory will afford ample accommodation for large classes. There are, in addition, smaller laboratories for Phanerogamic and Cryptogamic Botany, special rooms for preparation, sterilisation, chemistry and photography and research accommodation. Opening out of the large laboratory is a small conservatory for the culture and preservation of demonstration material.

The practical work in plant physiology and genetics will be done in a special large physiological laboratory (20′0″x75′0″), and three adjoining glass houses, each 60 feet long and 18 ft. wide, with the exception of a section of the central house which is 25 feet square.

CEMENT LABORATORIES.

The laboratory is equipped for making complete tests on the strength and properties of cements, mortars, concrete, concrete beams, etc., and includes the following:—Tensile testing machines, hydraulic compression machine (50) ton, specific gravity apparatus, sieves for fineness tests, steaming apparatus, Vicat's and Gilmore's needles, metal moulds, mixers, rammers, balances, etc. Tanks are provided for the storage of briquettes and other test specimens, and the equipment is supplemented by that of the Strength of Materials Laboratory in making tests on large sized specimens.

CHEMICAL LABORATORIES.

(*In the Chemistry and Mining Building.*)

Each of the three principal laboratories has a floor-space of about 2,400 square feet, and together they provide accommodation for nearly two hundred students working at a time. They are lighted on three sides, have special ventilation, and have ample hood space. Laboratory A is planned for beginners, and the other two for more advanced work; B for quantitative analysis and C for organic preparations and qualitative analysis. In connection with each of the main laboratories is a balance-room equipped with balances by several of the best makers and an instruction room.

Physical chemistry is provided for in a special laboratory, nearly 30 by 40 feet, supplied with electricity, steam, vacuum pumps, etc. The equipment of this laboratory consists of the apparatus necessary for the determination of the specific gravities of solutions, of the depression of freezing point, of the rise of boiling point, and of densities of gases and vapours. There are constant-temperature baths for accurate measurement of solubilities, Kohlrausch's apparatus for determining the electrical

conductivity of solutions, and the apparatus necessary for measuring the electromotive forces generated between metals and their solutions, and involtaic cells generally. There are also calorimeters for measuring the heat effects produced in chemical reactions. On the same floor there is an optical room, devoted more particularly to crystallographic work and furnished with goniometers, polarising miscroscopes, axial-angle apparatus, refractometers, etc.

Immediately adjoining the laboratory of physical chemistry is the photographic department, supplied with two dark rooms, arranged on the maze system, and provided with the necessary appliances for all ordinary photographic work, including an enlarging camera and apparatus for micro-photography.

The laboratory for gas analysis is fitted with a large tank to contain water at the temperature of the room, for use in obtaining a constant temperature in the measurement of gases. The tables are arranged for work with mercury, and the laboratory is supplied with the apparatus of Hempel, Dittmar, Orsat, Elliott and others. It contains also Fleuss, Boltwood, and Topler pumps for producing high vacua.

The laboratory for electrolytic analysis is supplied with accumulators, thermopiles, platinum electrodes, rheostats, ammeters, voltmeters, etc.

Another room has lately been equipped with electric furnaces and other appliances for electro-chemical work.

The organic department comprises a laboratory for preparations and research, a combustion room for analysis, a dark room for polariscope and saccharimeter work, and a lecture room. The laboratory is fitted with all the necessary apparatus for organic research—special hoods for work with poisonous gases, regulating ovens for digesting and drying at various temperatures, filter presses for the extraction of raw materials, and various forms of apparatus for distillation in vacuo. The dark room is equipped with polariscopes and saccharimeters for sugar work. There is a large supply of the necessary organic chemicals, which are supplied free of charge to students engaged in routine or research work in this department.

The laboratory for industrial chemistry is especially ventilated and fireproofed. Here operations on a semi-commercial scale may be conducted involving the use of explosive and other dangerous chemicals.

The Chemistry Building is well supplied with small research laboratories for graduate and other research students.

ELECTRICAL LABORATORIES

The Main Laboratory is equipped primarily for the study of alternating current phenomena and is equipped with; motor-driven alternators of various types, giving a range of frequency of from 25 to 250 cycles per sec.; single and polyphase induction motors of the squirrel cage and wound rotor types; single phase series and repulsion motors; constant voltage and constant current transformers; mercury arc rectifier; rotary converters; potential regulators; meters for the measurement of current, voltage,

power, frequency, power factor, and wave form; rheostats, circuit breakers, condensers, reactance coils, synchroscopes and other auxiliary apparatus. An electric travelling crane spans the laboratory and gives facilities for the rearrangement of the machines.

The above laboratory is also used by the Third Year electrical students for the study of current flow in circuits and of direct current machinery.

The Electrical Laboratory on the third floor of the Workman Building is used by the students of other departments who are taking an elementary electrical course, for the study of both direct and alternating current phenomena. The laboratory is equipped with: Shunt, compound and series wound direct current generators and motors of different types; constant current generators; arc and incandescent lamps; meters for the measurement of current, voltage and power; rheostats, circuit breakers, starters and other auxiliary apparatus. Several small alternators, transformers, rotary converters and induction motors along with the necessary instruments and control apparatus are provided for use by the students taking the general elementary course. A hand-operated travelling crane gives facility for the rearrangement of the machines.

The Standardizing Laboratory is equipped for the accurate measurement of direct currents to 1,000 amperes and voltages to 1,500 and of alternating currents to 200 amperes and voltages to 1,500. By the use of standard instrument transformers, alternating currents to 5,000 amperes and voltages to any reasonable value may be accurately measured. The equipment includes Kelvin current and watt balancers; Weston laboratory standard ammeters, voltmeters and wattmeters; potentiometers; Wheatstone and conductivity bridges; galvanometers, standard resistances and cells and other special apparatus.

The power is obtained from two motor generator sets, from one of which direct current to 1,000 amperes may be obtained, and from the other alternating current may be obtained over a considerable range of frequency up to 1,500 amperes and at any phase relation to voltages up to 440.

The High Voltage Laboratory contains the following equipment: Four 200 to 50,000 volt transformers supplied with condenser bushings and insulated so as to operate up to 300,000 volts; one 200 to 2,000 volt insulating transformer; one 110 to 20,000 volt testing transformer; standard spark gaps for oil and air; cathode ray tubes, electrostatic voltmeters and other auxiliary equipment. The transformers are provided with auxiliary voltage coils for direct pressure measurement and for connection to the oscillograph. The connections to this laboratory are such that any machine in the department may be used as a source of power and controlled directly from the transformer room, so that a wide range of frequency and of wave form is available for experimental work.

The Photometer Laboratory contains a Reichanstahlt type precision photometer bar with a wide range of certified standard incandescent lamps, hand operated and power driven universal rotators, motor driven sector disk and a complete set of screens, also a Matthew's integrating photometer for incandescent lamps. A Sharp Millar portable photometer

and standardizing set is also installed, with a full range of controlling rheostats and instruments provided with permanent wiring.

Oscillograph Laboratory.—This is equipped with a Blondel triple oscillograph, with both visual and photographic attachments, and is specially adapted for the study of transient phenomena. The department maintains a small machine-shop for instrument and machine repair and for the construction of special experimental apparatus.

Power is supplied to the above laboratories from the 220-volt, 3-wire, D.C. generators in the central power-house. The voltage is maintained approximately constant on the two sides of the system by a balancer set located in the Fourth Year laboratory, which is also equipped for supplying constant voltage circuits of 125 volts.

FOREST PRODUCTS LABORATORIES OF CANADA.

The Forest Products Laboratories of Canada, established by the Canadian Government in 1913, under the Forestry Branch, Department of the Interior, are associated with McGill University, and are located at 700 University Street, Montreal. The primary function of the laboratories is experimental research in the utilization of forest products, as a means toward the improvement of present industrial methods and the extension of commercial opportunities in this field.

There are four operating divisions, for technical research:—In Timber Tests, Timber Physics, Pulp and Paper, and Wood preservation. Provision is made for the establishment of other research divisions, as opportunity develops.

The Division of Timber Tests is engaged in the investigation of the mechanical properties of Canadian woods, primarily for the collection of data on the relative strength values of various species, as a basis for classification of timber for use as material in structures or manufactured articles in which strength is a factor. This work entails in the first place careful testing of a large number of small clear specimens of each species to determine its properties in bending, compression, hardness, shear, etc., independent of defects but in relation to characteristics of growth and seasoning. Further tests are then performed on timbers of large size to determine the effect produced on the strength by the presence of knots, etc. By arrangement with the University, provision has been made for the joint use of the Wicksteed, Emery and Riehle testing machines included in the equipment of this University department. The Forest Products Laboratories have installed one 30,000-pound capacity Olsen Universal machine, fitted with attachments of special design to meet the requirements of various testing methods, and one Hatt-Turner impact machine. Accessory apparatus includes deflectometers, compressometers, planimeter and calculating machines for reduction of test results. A saw-mill and wood-working shop are maintained in connection with this division. A branch timber-testing laboratory is being operated in co-operation with the University of British Columbia, Vancouver, B.C.

The work of the Division of Timber Physics includes the investigation of the physical properties of wood,—specific gravity, moisture content, rate of growth, etc.—for correlation with mechanical and other characteristics, the microscopic anatomy of wood and study of fibres, and photography. Electric ovens and balances are in use for this work, while apparatus for microscopic study includes a Jung-Thoma microtome (Thomson modification), microscopes, micrometers and accessory appliances for use in preparation of slides, measurement of fibres and other microscopical determinations. The work on the pathology of wood consists largely in examination of timber in buildings and situations favouring its decay and of the deterioration of pulp-wood and wood-pulp. An extensive collection of materials showing types of decay and deterioration has been made. The photographic department of the division is provided with a fully equipped dark-room and a complete range of photographic apparatus, including a Bausch and Lomb horizontal photomicrographic outfit, cameras and projection lantern.

The Division of Pulp and Paper is engaged in the investigation of the paper-making possibilities of Canadian woods, the practical study of processes related to this field and research in fundamental problems of the chemistry of wood. A complete semi-commercial paper mill has been installed for investigation on a large experimental scale. This equipment includes one single Marx beater, one double Marx beater, one small Jordan engine for refining paper stock; one riffler, one Packer flat screen, and one complete Pusey and Jones paper machine (wire 25 feet by 33 inches). Other equipment includes one complete Erfurt sizing system for preparation of rosin size, two gas-fired boilers, small digester and paper testing instruments. Larger digesters, corresponding in capacity to the larger experimental equipment, are planned for future installation. The chemical laboratory of the department is provided with complete equipment for experimental research in the chemistry of wood.

The Division of Wood Preservation is concerned with the investigation of methods of preservative treatment for the protection of timber against decay and insect destruction. The experimental laboratory of this division is provided with equipment for impregnation of wood with preservatives under pressure. This equipment includes one horizontal retort, 2 feet in diameter and 12 feet long; operating tank of corresponding capacity; one small vertical retort and tank, all designed for high pressure; pumps, air compressor and dry vacuum pump, receivers and condenser. A chemical laboratory in this department is used for analysis of preservatives and examination of treated material.

A large room is devoted to exhibits, among which a great variety of products derived from wood is displayed in relation to processes of manufacture. Many of the exhibit cases are arranged to illustrate the special characteristics of wood and the defects to which it is subject. A variety of tree products other than wood is also exhibited.

The laboratories include a library entirely devoted to technical and scientific works and periodicals relating to forest products and articles manufactured therefrom.

GEODETIC LABORATORY.

The equipment of this laboratory consists of:—

(1) Linear instruments: a Rogers comparator and standard bar for investigating standards of length; a fifty-foot standard and comparator for standardizing steel bands, chains, tapes, rods, etc.; a Munro-Rogers linear dividing engine.

(2) Circular instruments: a Rogers circular comparator; four level triers.

(3) Time: an astronomical clock and clock circuit in connection with the observatory clocks; chronometers running on mean and sidereal time; chronograph.

(4) Gravity: a portable Bessel's reversible pendulum apparatus with special pendulum clock and telescopic apparatus for observing coincidence by beats.

(5) A water gauge apparatus for testing aneroid barometers.

The laboratory and clock rooms are constructed with double walls and enclosed air spaces, and their heating is controlled by special thermostats, so that the temperature within may be brought to, and held at, any desired degree.

Astronomical Observatory.—The observatory equipment for the purpose of instruction in practical astronomy cousists of: A Bamberg prismatic transit with zenith attachment; six astronomical transits for meridian observations; two Troughton & Simms zenith telescopes; two 8" alt-azimuth instruments; sidereal and mean time clocks and chronometers, chronograph and electrical circuits by which observations and clock comparisons within or without the observatory may be made.

HYDRAULIC LABORATORY.

In this laboratory the student studies experimentally the laws governing the flow of liquids through orifices, pipes, weirs, etc., and also carries out experiments on the efficiency of various forms of water motors running under different conditions as regards head and supply.

The equipment includes:—Apparatus for the measurement of the discharge of water from orifices, nozzles, weirs, etc., under varying conditions; arrangements for investigation of the loss of head by surface friction, and at curves and bends in pipes; Venturi meter for use at different discharges; a hydraulic ram working against different heads; various water motors, including Pelton wheel, Girard impulse turbine; apparatus for measurement of pressure due to impact of jets on surfaces of different

forms; gauge testing appliances; Hele Shaw's apparatus for study of the steam lines in a perfect fluid, illustrating the flow round obstructions in a channel, and numerous magnetic problems; numerous calibrated tanks, weighing appliances, and measuring apparatus in connection with the above.

MECHANICAL ENGINEERING LABORATORIES.

These laboratories are used in connection with the courses in Mechanical Engineering subjects. The smaller apparatus belonging to the laboratories includes the necessary equipment of weighing machines, ordinary and water dynamometers, steam calorimeters, thermometers, gauges, pyrometers, coal, gas and oil calorimeters, indicators, planimeters, flue gas analysis, etc.

1. Mechanical Laboratory.

The equipment of this laboratory includes:—A Thurston railway pattern oil tester, fitted with water cooling and heating apparatus for varying the temperature of the brasses as desired; standard viscosimeters and other necessary apparatus for the physical testing of lubricants; a high speed horizontal engine having a cylinder 6 inches diameter, 9 inches stroke, and operated by compressed air; a gas-fired preheater for the above engine; two standard 9½-inch Westinghouse airbrake pumps, fitted for testing and for supplying compressed air for experimental and other purposes; a non-rotative Blake steam pump, having steam and water cylinders 4½ and 2¾ inches diameter and 4½ inches stroke; apparatus for measuring the heat loss from pipe coverings and from radiators; a specially designed hydraulic support and fittings, for carrying out experiments on the action of cutting tools in the lathe; apparatus for experiments on the efficiency of pulleys and hoisting appliances; on the efficiency of worm and other gearing, for governor testing; for testing fans and blowers; for studying problems connected with the balancing of reciprocating engines.

2. Steam Engine Laboratory.

This laboratory is furnished with an experimental steam engine of 120 I.H.P., specially designed for investigating the behaviour of steam under various conditions. The cylinders are 6½ inches, 9 inches, 13 inches and 18 inches in diameter, and the stroke of all the pistons is 15 inches. The cylinders can be so connected as to allow of working as a single, compound, triple, or quadruple expansion engine, either condensing or non-condensing, and with any desired rate of expansion. The jackets are so fitted as to permit of measuring independently the water condensed in the cover, barrel, or bottom jacket of each cylinder, and the engine can be worked with any desired initial pressure up to 200 lbs. per square inch. The measurements of heat are made by means of large tanks, which receive the cooling water and the condensed steam. There is an independent surface condenser and air pump. Two hydraulic absorption brakes and an

alternative friction brake serve to measure the mechanical power developed. This laboratory also contains the following machinery:—A Robb automatic cut-off engine, having a cylinder 10½ inches in diameter by 12 inches stroke, which is specially fitted up for the measurement of cylinder temperatures, and can be run at speeds up to 300 revolutions per minute; an automatic high-speed engine by Macintosh & Seymour, having a cylinder 12 inches in diameter by 12½ inches stroke, in connection with which there is an automatic recording apparatus for registering the load on the brake; a Leonard horizontal engine, having a cylinder 8 inches diameter by 9 inches stroke, specially fitted for instructional work in valve setting and provided with an independent surface condenser; a two stage air compressor (built in the workshops of the Department) taking 40 H.P., and having cylinders 10 inches and 17 inches in diameter, by 15 inches stroke (the compressor delivers its air into reservoirs placed beneath the floor of the machine shop, and is provided with an intercooler whose capacity can be varied as desired); a 15 K.W. Curtis steam turbo-generator with independent surface condenser, air pump, and a bank of lamps for varying the load; two 12 H.P. high-speed forced lubrication compound engines (built in the workshops of the Department), one of which is used to drive a Hall 1-ton Co_2 ice machine.

Steam is supplied to this laboratory by the boilers in the Workman Building. These consist of one 100 H.P. locomotive boiler, Belpaire type, fitted with Howden oil burning furnace, two Babcock and Wilcox water tube boilers, each 60 H.P. These boilers are fitted with the necessary tanks, weighing machines and apparatus for carrying out evaporative tests. For the study of superheated steam, one of the B. & W. boilers is fitted with a superheater built by the Superheater Co., and there is also a B. & W. separately fired superheater.

3. Gas Engine Laboratory.

This laboratory contains a horizontal gas engine by the National Gas Engine Company, having a cylinder 12 inches diameter by 20 inches stroke and developing 40 B.H.P.; a suction type producer for the above, with the necessary scrubbers and gas cleaning apparatus; a standard 4-inch gas meter, gasometer, and exhauster; a 10 B.H.P. Otto type gas engine (built in the workshops of the Department), having a cylinder 8½ inches diameter by 12 inches stroke; a 14 B.H.P. 2-cylinder 2-cycle Grey gasoline engine; a 4 H.P. Blackstone oil engine, and a Ford automobile engine.

METALLURGICAL AND ASSAYING LABORATORIES.

These consist of a large furnace room of 2,000 sq. feet, for metallurgical operations, a furnace room for assaying of 1,300 sq. feet, a balance room, small chemical laboratory, and parts of other rooms, which are utilized for pyrometric and photo-microscopic work. The furnace room is fitted with a water-jacket blast-furnace, 21 inches inside diameter, for

smelting lead and copper ores; also a hand reverberatory furnace for roasting ores, having a hearth 14 ft. by 6 ft., and a Bruckner roasting furnace.

The furnace room adjoins the milling and ore-dressing room (see below), and ores which have been crushed and dressed can easily be conveyed into the furnace room for roasting, smelting or leaching treatments. In addition to this comparatively large scale plant, apparatus has been provided to enable the students to study in detail the more important metallurgical operations, using quantities of ore or metallurgical products of usually not more than a few pounds in weight. With such appliances, the work of the student can be of a more individual character than is generally possible with large-scale plants, and the reactions which occur can be more easily and exactly studied.

For the purpose of small-scale work there is a large crucible furnace which can be used with either natural or forced draught, an oil-fired crucible furnace, an oil-fired assay furnace, a large gas-furnace which can be used either as an oven-furnace or a muffle furnace, and a number of small muffle and crucible furnaces in the assaying laboratory. Several small dental furnaces have been added for the course of instruction in dental metallurgy.

Small blast-furnaces, lined with brick, have been constructed and used successfully for smelting small quantities of copper and cobalt ores. A Roots' blower has been provided for the blast furnaces, and connections for supplying forced draft have been made to the gas and reverberatory furnaces. Leaching operations on a small scale are conducted in stoppered bottles which can be agitated by machinery.

Provision has also been made for electric furnace work. The plant consists of a 50 H.P. motor and a 30 K.W. alternating current generator, together with transformers and measuring instruments. A Colby induction furnace and Rennerfelt and Snyder arc furnaces have been installed for making steel electrically, and the smelting of ores and other electric furnace operations can be carried on satisfactorily with this plant. A low-voltage 1 H.P. direct-current generator is employed for electrolytic operations. An electric muffle furnace, having carbon resisters and a carborundum muffle, is in regular use for determining the melting temperature of refractory materials, measurements being made with an optical pyrometer and Seger cones. The furnace can be heated to 1800° C. A "surface combustion" gas furnace has also been added for testing refractory materials.

A "hump" electric furnace with recording pyrometer has been installed for the heat treatment of steel and general pyrometric research.

A new feature is an oxyacetylene cutting and welding outfit that has proved both instructive and useful for repairs and new construction.

A powerful hydraulic press and a piece of apparatus for compressing gases by hydraulic power are available for experiments that have to be conducted under great pressure.

A small drop-testing machine, a Sankey metal-bending tester, and Shore and Brinell Hardness testers have been installed for investigating the mechanical properties of metals. The assay laboratory contains a small pair of jewellers' rolls.

The assaying laboratory is equipped with a number of muffle and crucible furnaces fired with coke, a large gas muffle furnace and a small muffle furnace and crucible furnace fired by gasoline.

Adjoining the assaying laboratory are the balance room and a small laboratory for chemical work. In another room are a number of electrical and other pyrometers, metallographic microscopes, and a micro-photographic outfit for recording the microscopic structure of metals and alloys. Polishing machines worked by power have been installed to prepare specimens for examination.

MINING AND ORE-DRESSING LABORATORIES.

The Department of Mining Engineering has one large laboratory for ore-dressing, and a number of rooms of moderate size equipped for use as special laboratories, dark room, machine shop, etc. The effective floor space is about 8,500 square feet, in addition to which the departmental store rooms, ore bins, etc., have an area of 1,500 feet.

The ore-dressing laboratory proper is built in two storeys about a central well and has about 5,000 feet total floor space. The equipment comprises two classes of apparatus. First, a large number of pieces specially designed for individual work on a small scale. Many of these are for elementary investigation and demonstrations of a theoretical nature, others are working reproductions on a reduced scale of typical ore dressing and milling machines. Second, a complete plant of standard apparatus for ore crushing, sampling, milling, concentrating and for coal washing. This apparatus has been chosen from the best designs in common use, and whenever possible each important class of ore-dressing machinery is represented by two or more different types, in order that comparisons may be made. Each machine is so arranged that it may be used and tested independently, but, when expedient, a number of machines can be connected by conveyors, and thus complete plants of various kinds can be improvised, each of sufficient capacity to test large lots of material under approximately working conditions.

The chief pieces of apparatus in the main laboratory are rockbreakers of four kinds, Blake, Dodge, Gates, and Sturtevant, for coarse crushing; gravity stamp mills of 600 and 950 lbs. respectively, a small steam stamp and a 3-foot Huntington centrifugal roller mill, for crushing and amalgamating; high speed steel-tyred rolls for fine crushing; Sturtevant and Gates grinders for preparing samples, and ball mills, pebble mills and

amalgamation pans for extremely fine grinding. Following these there are Bell, Jones and Brunton samplers; a Callow belt screen; a series of trommels and power shaking screens for sizing the crushed ores; two especially designed jigs of two and four compartments with adjustable eccentric, cam and slide mechanisms, a pneumatic jig, a Richards pulsator jig, a Taylor vibrating jig and several small hand and power jigs for coarse and medium concentration; slime tables of several types, including a Frue vanner, Wifley and Butchart riffled tables; magnetic separators of three types, an electrostatic separator, dry and wet coal washers, flotation apparatus of several different types for both continuous and intermittent operations; a pachuca agitator, cyanidation vats and agitators, vacuum and pressure filters; plates, pans and barrels for amalgamating gold and silver ores; settling and feeding cones, and various other special pieces of ore-dressing apparatus.

An hydraulic lift and a number of belt and bucket hydraulic jet elevators, feeders, samplers, steam jacketed drying tables, etc., are provided for use in heavy continuous work. The power chiefly used is electricity, generated in the University power and light station and utilized through a number of independent electric motors aggregating 75 H.P. conveniently placed near the machines to be operated, but steam is used for some pieces of apparatus and others may be driven by a Pelton wheel. A motor-driven vacuum pump and air-compressor of $7\frac{1}{2}$ H.P. provides an ample supply of compressed air. The department is equipped with suitable apparatus for electrical measurements, and is thus able to make continuous and accurate determination of the amount of power used by each machine.

In addition to the main laboratory, there are excellent facilities for advanced and research work—including a small but thoroughly equipped chemical and assay laboratory and a photographic room. The department possesses a number of cameras, microscopes, recording gauges and indicators, a good equipment of weighing and measuring devices, and a number of pieces of special apparatus for advanced theoretical investigation.

THE PHYSICAL LABORATORIES.

The equipment of the Macdonald Physical Laboratories comprises: (1) apparatus for illustrating lectures; (2) simple forms of the principal instruments for use by students in practical work; (3) various types of important instruments for exact measurements, to be used in connection with special work and research.

The magnetic laboratory contains magnetic instruments and variometers of different patterns, and also a duplicate of the B.A. Electrodynamometer. The laboratory on the opposite side of the basement contains a Lorenz apparatus for the absolute measurement of resistance, constructed under the supervision of Prof. Viriamu Jones.

There is a constant temperature room, surrounded by double walls, which is fitted for comparator work.

The first floor contains the main electrical laboratory, which is a room 60 feet by 40, and is fitted with a number of brick piers, which come up through the floor, and rest on independent foundations, in addition to the usual slate shelves around the walls. This room contains a large number of electrometers, galvanometers, potentiometers, and other testing instruments of various patterns, and adapted for different uses. Three small research laboratories adjoin the electrical laboratory. A well equipped workshop serves for the construction of research apparatus and repair work.

On the second floor of the building there is the heat laboratory, devoted to advanced work in thermometry, pyrometry and calorimetry and also to such electrical work as involves the use of thermostats and the measurement of the effects of temperature. This adjoins a private laboratory fitted for research work.

The third floor contains two small lecture rooms, a library and reading room for the staff and professors' rooms.

The fourth floor contains the large elementary laboratory, a room 60 feet square, devoted to elementary practical work in heat, sound, light, electricity and magnetism. There is a demonstrators' room adjoining, and an optical annex devoted to experiments with lenses, galvanometers, etc., which require a darkened room. On the other side of the building there is a spectroscopic room, containing a six-inch Rowland grating, with mountings by Brashear, and other large spectrometers and polarimeters; also a series of smaller optical rooms, including a photometric room, especially fitted for arc photometry, and a dark room for photographic work.

THE PHYSIOLOGICAL LABORATORIES.

With the addition of the new structure to the "Old Medical Building" so as to form one large "Biological Building," it was arranged that the Department of Physiology should continue in occupation of its teaching quarters in the "Old Medical Building," and at the same time take over a complete floor of the new building. The new quarters thus provided include the fourth floor of the new building and the upper floor of the old building, the two suites of rooms forming one continuous department practically on the same level. The old quarters, containing the large teaching laboratories, have been assigned almost exclusively for the instruction of students, the new quarters providing, in the main, accommodation for research.

Teaching Section: The two main teaching laboratories, situated on the upper floor of the "Old Medical Building," are each lighted from roof and side and accommodate, in each case, ninety-six students. One of these, for the junior class, has long tables provided with separate motors and shafting for the recording drums. This room is fitted with display

cases for physiological instruments and also contains a series of demonstration microscopes. The senior practical room, designed for mammalia work, has sixteen fixed tables arranged in parallel rows (units) of four, each unit-group of four being set out at the same time with the same apparatus. All the tables are fitted with gas, with water-supply and with various electric leads, while units of four are, according to circumstances, provided with separately motor-driven, long-paper kymographs, with air-supply for artificial respiration, with hot water at controlled temperature for perfusion, etc. In close proximity to the two practical rooms is a demonstration theatre, employed for instruction at the commencement of practical work or independent demonstration, with an adjoining dark room of ample size for optical and other experiments.

On the top floor of the same building are also the workshop (equipped) with two lathes, one a Rivett, with milling machine, shaper, and drill press (each with all accessories), class preparation and store rooms, drum, smoking and varnishing rooms, lavatories, and some research rooms.

Research Section: As before mentioned, this occupies one floor of the new edifice. It includes a class room for advanced practical instruction, two large research rooms for staff and for other research workers, a histology room (which includes a dark room), the professor's office and private research room, library, the associate professor's office and private research room, store room for instruments, balance, chemical and gas analysis rooms, string-galvanometer room, and animal quarters, including hospital, operating theatre, and sterilizing rooms.

The frog and turtle tanks are in the basement. A separate two-storey building, in close proximity to the department, gives accommodation for mammals.

THE PSYCHOLOGICAL LABORATORY.

The psychological laboratory occupies two rooms in the Arts Building. It contains apparatus for the study and investigation of sensation, perception, ideas, memory, association, attention, volition, feelings, emotions and reaction. This equipment serves three purposes: First, it is adapted to research work in the various fields of experimental psychology, including physiological psychology, educational psychology, and applied psychology. Second, it is used to acquaint beginners with the methods of experimental psychology, both qualitative and quantitative. Third, it furnishes material for experimental demonstration in the elementary and advanced lecture courses.

PETROGRAPHICAL LABORATORIES.

The Petrographical Laboratory, containing the chief rock collections of the University, is situated in the Chemistry and Mining building. It is provided with a number of petrographical microscopes by Bausch & Lomb, Seibert, Crouch, and Fuess, as well as with models, sets of thin sections, electromagnets, heavy solutions, etc., for petrographical work.

A collection of typical rocks has been especially prepared for the use of students, and a complete equipment for cutting, grinding, and polishing rocks has been installed, which runs by electric power and gives excellent facilities for the preparation of thin sections for microscopic use.

For advanced work and petrographical investigation, Dr. Adams' extensive private collection of rocks and thin sections is available for purposes of study and comparison.

STRENGTH OF MATERIALS LABORATORIES.

These laboratories are equipped with apparatus for the determination of the physical properties of the materials of construction and for illustrating the fundamental laws of the strength of materials. The equipment includes:—

(*a*) Riehle testing machine of 60,000 lbs. capacity, a Wicksteed 100-ton, a Wicksteed 50-ton, and an Emery 75-ton machine for testing the tensile, compressive and transverse strength of the several materials of construction. To the Wicksteed has been added a specially designed arrangement, by which the transverse strength of girders and beams up to 26 ft. in length can be determined. Special holders have also been designed and made in the laboratory for investigating the tensile and shearing strength of timber, and for the testing of wire ropes, belts, etc. An Olsen machine of 10,000 of lbs. capacity is used for testing wire.

(*b*) A Rondet-Schor Machine, with a capacity of 500 kilograms, for testing textile fabrics.

(*c*) A Torsion Machine with a specially designed angle measurer, by which the amount of the torsion can be measured with extreme accuracy.

(*d*) An accumulator, furnishing a pressure of 3,600 lbs. per square inch, which is transmitted to the several testing machines, and ensures a perfectly steady application of stress, an impossibility when any form of pump is substituted for an accumulator. An automatic electric motor has been designed in the laboratory and constructed for the purpose of actuating the accumulator.

(*e*) A Blake and Worthington steam pump and an electric pump, designed to work against a pressure of 3,600 lbs. per square inch. The accumulator may be actuated by any of the pumps, and, if at any time

it is necessary to do so, any of the pumps may be employed to actuate the testing machines direct. When in operation, the work of the pump and the accumulator is automatic.

(*f*) Extensometers of the Bovey, Ewing, Unwin, Martens, Marshall and other types.

(*g*) Portable cathetometers, and also a large cathetometer specially designed and constructed for the determination of the extensions, compressions and deflections of the specimens under stress in the testing machines.

(*h*) Various electric motors for working the several machines.

(*i*) A drying oven for beams up to 26 feet in length. The hot air in this oven is kept in circulation by means of a fan driven by an electric motor.

(*j*) Numerous gauges, amongst which may be specially noticed an Emery pressure gauge, graduated in single lbs. up to 2,500 lbs. per square inch. All of the testing machines are on the same pressure circuit, and are connected with the Emery gauge and also other standard gauges, including recording gauges. This arrangement provides a practically perfect means of checking the accuracy of the testing.

(*k*) Special apparatus and recording gauge for the testing of hose, etc.

(*l*) Dynamometers for measuring the strength of textile fabrics, the holding power of nails, etc.

(*m*) Apparatus for determining the elasticity of long wires.

(*n*) Apparatus for determining the hardness of materials of construction, including Shore scleroscope.

(*o*) Zeiss and other microscopes.

(*p*) Delicate chemical and other balances. A very important part of the equipment is the Oertling balance, capable of indicating with extreme accuracy weights of from .00001 lb up to 125 lbs.

(*q*) Apparatus for the microscopic study of metals and for microscopic photography.

(*r*) Micrometers of all kinds, including a 10-inch Howard gauge, and Berry strain gauges.

(*s*) A transverse bending machine which is adapted for loads up to 3,000 lbs. and for beams of 10 ft. span, and a testing machine for applying bending and torsion simultaneously.

THE ZOOLOGICAL LABORATORIES.

The Zoological Laboratories are situated in the New Biological Building where ample provision is made for the accommodation of all classes.

MUSEUMS.

ARCHITECTURAL MUSEUM.

The Museum of the Department of Architecture contains a representative collection of historic casts illustrating the development of architectural ornament and form, and the technique of architectural material. Many of the casts have been specially prepared for the Department. The group of English mediæval art is unique in any University on this continent. The collection of metal work includes examples of iron, brass, copper and jewellery, and is arranged so as to exhibit the technical possibilities of the material.

THE McCORD NATIONAL MUSEUM.

This Museum is located in the old Joseph House, at the corner of Sherbrooke and McTavish Streets. The collection is a gift to the University from Mr. David Ross McCord of Temple Grove, a graduate in Arts of 1863, and in Law of 1867. The range of the collection is most extensive, comprising, as it does, mementoes of the great statesmen, warriors, writers, and spiritual leaders among the two principal races which are now represented in Canada, as well as of the great explorers of every part of the North American continent. The Arctic souvenirs are specially numerous and important, and in the department of Wolfiana, the Museum is probably unrivalled.

One of the most important departments is that treating of the North American Indian, the section relating to the Indians of the Eastern half of the continent being especially complete. Here are to be seen the arms and personal relics of Tecumseh and Brant, and most wonderful specimens of wampum and Indian silver. The great series of paintings illustrative of the campaigns and archæology of Canada are not only accurate, but artistic. There are separate departments for china, glass and historical furniture as well as one for the cradle industries of Canada. There is a special room for relics of the Founder of the University, and of its first great Principal, Sir Wm. Dawson, with his distinguished colleagues in science at the time, Sir William Logan and Dr. Sterry Hunt.

A special aim of the Museum is to form a school of useful and ornamental art, based in types of native Indian industry, such as the manufacture of wall papers, works in metal of all kinds, and ceramic work, in the motifs for which the Museum is especially rich.

MEDICAL MUSEUMS

(For Museums of Anatomy, Hygiene, and Pathology, see pages 302-304.)

THE PETER REDPATH MUSEUM.

1. The botanical room on the ground floor contains the herbarium consisting of 50,000 specimens of Canadian and exotic plants and collections illustrating structural and economic botany.

2. In the corridor on the ground floor is exhibited the Todd Ethnographical Collection from West Africa.

3. The Lyman entomological room is also situated on the ground floor. Mr. A. F. Winn is the entomological curator under the Lyman Bequest.

4. On the first floor is a room over the entrance hall, in which are cases containing archæological and ethnological objects, including collections from the Queen Charlotte Islands, from Egypt, and from West Africa.

5. This room opens into the great museum hall, on each side of which are alcoves with upright and table cases containing the collection in palæontology arranged primarily to illustrate the successive geological systems, and subordinately to this, in the order of zoological and botanical classification, so as to enable the student to see the general order of life in successive periods, and to trace any particular group through its geological history.

6. At the extreme end of the hall are placed the collections of minerals and rocks, arranged in such a manner as to facilitate their systematic study. In the centre of the hall are economic collections and large casts and models.

7. In the upper story or gallery of the great hall are placed the zoological collections; the invertebrate animals in table cases in regular series, beginning with the lower forms; the vertebrate animals in upright cases, in similar order. The PHILIP CARPENTER COLLECTION of shells is especially noteworthy for its arrangement and completeness.

Papers and memoirs relating to certain type specimens in the collections can be obtained from the Assistant Curator. Classes of pupils from schools can be admitted on certain days under regulations which may be learned from the Professors of Botany, Geology and Zoology or from the Registrar of the University.

WORKSHOPS

The workshops, erected on the Thomas Workman Endowment, have a floor area of more than 20,000 square feet.

Equipment.—The carpenter shop and the pattern shop contain thirty-eight carpenters' and pattern-makers' benches complete with the necessary sets of hand tools, twenty-two wood-turning lathes with their turning tools, a large pattern-maker's lathe for faceplate work, one circular-saw bench, a jig-saw, a band-saw, two wood-trimmers, a surface-planer, a thickness planer, a mortising machine, a saw-sharpener, and one universal wood-working machine.

The smith shop is provided with twenty Sturtevant forges, which are power-driven and are connected with an exhaust fan. There is a power hammer, and the necessary equipment of anvils, swage blocks, sets, flatteners and other tools. Provision is made for instruction in soldering and brazing.

The foundry has benches, tools and apparatus for bench and floor moulding and core-making, and is able to accommodate twenty students. A gas-fired brass melting furnace, a cupola for melting iron, and the necessary core-ovens and core-benches give facilities for undertaking iron foundry work in green and dry sand, and for brass moulding. The shop is served by a hand travelling crane of one-ton capacity.

The machine shop has twelve 18-inch engine lathes, three 16-inch engine lathes, two 14-inch engine lathes, one 18-inch turret lathe fitted for stud and screw making, one 27-inch engine lathe, one brass-finishing lathe, one 36-inch vertical drilling machine with compound table, one universal milling machine with vertical milling attachment and dividing headstock, one planer capable of taking work up to 24 x 24 in. x 5 ft., one 9-inch slotting machine, two 16-inch shapers, one universal grinding machine, centering machine, a cutter grinder, a tool grinder, and an inch vertical drilling machine with compound table, one universal buffing and emery grinding machine. There are vise benches for twenty-five students, with the necessary hand-tools, and a marking-off table. The tool-room contains a full equipment of drills, reamers, milling cutters, and accessories, gauges, calipers, and other measuring instruments.

All the machinery in the workshops is driven electrically by motors taking power from the generating station in the Macdonald Building.

REGISTER OF STUDENTS.

The names of students in the Department of Social Service, the School for Graduate Nurses, the School of Physical Education, the Graduate School and the Faculty of Music are given separately at the end of the list.

Name	Faculty and Year	Home Address
Abbott, Arthur Caldwell	Ap. Sci. 1	299 Pine Ave. W., Montreal, Que.
Abbott-Smith, George Wakely	Med. 3	10 Bellevue Ave., Westmount, Que.
Abbott-Smith, Henry Bancroft	Ap. Sci. 3 (El.)	10 Bellevue Ave., Westmount, Que.
Abbott-Smith, Reginald B	Ap. Sci. 4 (Chem. Eng.)	10 Bellevue Ave., Westmount, Que.
Abella, Ernesto	Ap. Sci. 1	136 St. Nicolas St., Havana, Cuba.
Aber, Harry William	Arts 1	1673 Notre Dame St., Montreal, Que.
Abey, William John	Med. 2	Chater, Manitoba.
Abinovitch, Monroe	Arts 1	4462 Sherbrooke St. W., Westmount, Quebec.
Abraham, Johnston William	Dent. 2	88 City Councillors St., Montreal, Que.
Acer, Dorothy	Arts P	733 Pine Ave. W., Montreal, Que.
Acker, John Christopher	Med. 4	26 South Bland St., Halifax, N.S.
Ackerman, Charles Francis	Med. 3	Melfort, Sask.
Ackman, Frederick Douglas	Med. 4	177 Botsford St., Moncton, N.B.
Acton, Joseph Henry	Med. 3	Gananoque, Ont.
Adams, Albert Oliver	Ap. Sci. 2	Box 59, Bowesville, Ont.
Adams, Earl Hay	Med. 5	Pointe Claire, Que.
Adams, Leyland John	Med. 1	Magog, Que.
Adamson, Lewis Gordon	Med. 1	1 St. Charles Apts., Amesbury St., Montreal, Que.
Addie, Donald Kyle	Ap. Sci. 2	148 St. Cyrille St., Quebec, Que.
Addleman, William	Med. 1	312 Daly Ave., Ottawa, Ont.
Addy, Paul H	Arts 4 (Hon.)	Jordan, Ont.
Adney, Francis Glenn	Arts 3 (B.Sc. Hon.)	Woodstock, N.B.
Affleck, Jean Scott	Arts 1	230 Gladstone Ave., Ottawa, Ont.
Aggiman, Selim	Com. 1	Constantinople, Turkey.
Ahern, Arthur Weston	Ap. Sci 4 (Chem. Eng.)	8 St. Denis Ave., Quebec, Que.
Ahern, Philip Charles (Left Nov. 1921.)	Ap. Sci 3 (El.)	377 Daly Ave., Ottawa, Ont.
Aikman, Howard	Arts. 2	340 St. Catherine Rd., Outremont, Que.
Alexander, Benjamin (Double course.)	Arts 4 (B.Sc.)	28 Durocher St., Montreal, Que.
Alexander, Edward Ryckman	Arts 2	334 Harvard Ave., Montreal, Que.
Allan, John Maynes	Ap. Sci. 3 (Chem.Eng.)	Box 650 Halifax, N.S.
Allan, Warde B	Arts 3 (Hon.)	602-13th Ave. W., Calgary, Alta.
Allanson, William	Dent. 1	85 Rue Massinet, Shanghai, China.
Allcorn, Philip Leslie	Ap. Sci. 1	99 Selby St., Westmount, Que.
Allen, Harold McClellan	Med. 5	108 Carlton St., Toronto, Ont.
Allison, Jesse Graham	Arts 1	619 Belgium Ave., Westmount, Que.
Allison, Winston (Double Course.)	Arts 1	Sav-la-mar., Jamaica, B.W.I.
Almond, Lloyd Beemer	Ap. Sci. 1	299 Marlowe Ave., Montreal, Que.
Altner, Harry Arthur	Med. 3	537 Cadieux St., Montreal, Que.
Alward, Harold Cedric	Med. 3	84 Burpee Ave., St. John N.B.
Amaron, Errol Calvin	Arts 3 (Hon.)	Naramata, B.C.
Ambridge, Douglas White	Ap. Sci. 3	5A Marsella 83, Mexico City, Mexico.
Amos, Edward Augustus	Med. 3	8-36th, Ave., Lachine, Que.
Amos, Isadore L	Med. 2	1456 St. Urbain St., Montreal, Que.
Amos, Pierre C	Arch. 3	78 Crescent St., Montreal, Que.
Anderson, Dan	Ap. Sci. 4 (El.)	289 Richmond St., Charlottetown P.E.I.

NAME	FACULTY AND YEAR	HOME ADDRESS
Anderson, Duncan Robinson	Law 1	100 Park Ave., Montreal, Que.
Anderson, Edward Stanley	Med. 3	c/o Mills, Raney & Dewar., Sun Life Bldg., Toronto, Ont.
Anderson, Francis Lionel P	Arts 1	1930 Park Ave., Montreal, Que.
Anderson, Gladys Pomeroy (Mrs.)	Arts P	152 Percival Ave., Montreal West, Que.
Anderson, Llewellyn K	Arts. 3 (Hon.)	Beauharnois, Que.
Anderson, Robert Bernford	Ap. Sci. 2	4484 Western Ave., Montreal, Que.
Andrews, Donald C	Ap. Sci. 2	68 Arlington Ave., Westmount, Que.
Andrews, Florence	Arts P	490 Cavendish Ave., Montreal, Que.
Andrews, Everard Aloysius	Med. 2	St. Davids' Grenada B.W.I.
Anglin, Ives Maurice	Med. 4	St. John ,N.B.
Annable, Weldon Grant	Com. 1	43 St. Luke St., Montreal, Que.
Anson, Clement Matthew	Ap. Sci. 1	58 Church St., Verdun, Que.
Antliff, James Cooper	Ap. Sci. 3 (El.)	111 Blenheim Place, Westmount, Qut.
Apps, Carl O	Med. 4	Mohawk, Ont.
Archer, Aubrey Clifford	Ap. Sci. 2	Hastings Lodge, Barbados.
Archibald, Francis	Ap. Sci. 3 (Chem. Eng.)	Wolfville, N.S.
Archibald, Ian Thurston	Arch. 1	4278 Dorchester St. W., Westmount, Que.
Archibald, William Charles	Med. 5	Wolfville, N.S.
Argue, Forrest B	Med. 3	Shawville, Que.
Argue, Leila Elizabeth	Arts 1 (B.Sc.)	109 O'Connor St., Ottawa, Ont.
Armitage, Clifford Daigneau	Com. 1	45 Montreal St., Sherbrooke, Que.
Armstrong Arnold Victor	Ap. Sci. 3 (El.)	845 Oxenden Ave., Montreal, Que.
Armstrong, Charles Alfred R.	Arts 1	778 St. George St., Peterborough, Ont.
Armstrong, Lawrence Henry	Ap. Sci. 4 (El.)	845 Oxenden Ave., Montreal, Que.
Arnold, Fred. M	Arts P Ap. Sci. P.	265-Fifth Ave., Maisonneuve, Que.
Arsenault, Ludger	Dent. 1	Alder Point, C.B.
Arthur, Wilfred S	Med. 5	Sudbury, Ont.
Ashby, Reginald Beale	Ap. Sci. 2	12 Highland Ave., Montreal, Que.
Atkinson, Alfred Lyford C	Ap. Sci. 2	c/o C. R. Slane Fleming, Vermilion, Ala.
Atkinson, Doris Evelyn	Arts 2	Melbourne, Que.
Aubrey, J. Albrin	Med. 1	Lancaster, Ont.
Ault, J. Oscar	Dent. 1	Cornwall, Ont.
Avison, Henry R. C	Arts 4 (Hon.)	New Denver, B.C.
Ayer, Ruth Claxton	Arts P	343 Olivier Ave., Westmount, Que.
Aylmer, Margaret Lydia	Arts P	25 Bellevue Ave., Westmount, Que.
Aylwood, Gerald Fitzgerald	Med. 4	c/o H. F. Bullen, 908 St. Charles Sc., Victoria, B.C.
Azeff, Henry	Com. 1	143 St. Urbain St., Montreal, Que.
Backer, David Russell	Med. 3	1337 St. Urbain St., Montreal, Que.
Backman, Peter Louis	Med. 2	1256 St. Urbain St., Montreal, Que.
Badger, Roland Ashley (Left Nov. 17th. 1921.)	Law. 1	Ayer's Cliff, Que.
Bagan, Samuel	Arts 1	1043 St. Lawrence Blvd., Montreal, Que.
Bagg, William Herbert	Arts P	1357 Clarke St., Montreal, Que.
Bagley, Harry Edison	Med. 3	Danville, Que.
Baile, Elizabeth Randall	Arts P	303 Pine Ave. W., Montreal, Que.
Baile, Marion Platt	Arts P	303 Pine Ave. W., Montreal, Que.
Bailey, Loring Withall	Ap. Sci. 2	122 Grande Allee, Quebec, Que.
Bailey, William Eaves	Ap. Sci. 1	471 Viger Ave., Montreal, Que.
Baillie, Donald Arthur	Ap. Sci. 3 (Me.)	513 Roslyn Ave., Westmount, Que.
Baily, Francis Arthur Albert	Ap. Sci. 1	364 Kensington Ave., Westmount, Que.
Baird, Leslie David	Arts P	185 Wilson Ave., Montreal, Que.
Baker, Hyman	Law 1	741 St. Lawrence Blvd., Montreal, Que.
Baker, M. Edith	Arts 1	194 Milton St., Montreal, Que.
Baker, Mildred L.B	Arts 1 (B.Sc.)	160 Hutchison St., Montreal, Que.
Ball, Carolyn Muir	Arts 3 (Hon.)	533 Lansdowne Ave., Westmount, Que
Ball, Franklin Percival	Med. 1	Waterville, Que.
Ball, John Clement	Med. 1	27 Church St., St. Catharines, Ont.
Ballantyne, Charles Trenholme	Arts 3 (Hon.)	678 Mountain St., Montreal, Que.

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Ballemy, James Lister	Ap. Sci. 1	Grand Falls, Nfld.
Ballon, Harry O.	Med. 4	255 Bishop St., Montreal, Que.
Banfill, Florence	Arts 3	East Angus, Que.
Banfill, Mary Evelyn Sarah	Arts 4	East Angus, Que.
Banfill, Harold Leroy	Ap. Sci. 4 (El.)	Richmond, Que.
Banford, Jean Elizabeth	Arts 1	Hawkesbury, Ont.
Barker, Beatrice (Mrs.)	Arts P	20 Oxford Apts., Oxford Ave. Montreal, Quebec.
Barkoff, Dennis	Dent. 2	409 Wiley St., Fort William, Ont.
Barnard, Edmond Austin	Arts 1	313 Stanley St., Montreal, Que.
Barnes, Dewitt Rowland Stanley	Med. 3	Turin, New York, N.Y., U.S.A.
Barnes, Doris Scoullar	Arts P	Box 44, St. John, N.B.
Barnes, William Howard	Ap. Sci. 2	637 Grosvenor Ave., Westmount, Que.
Barre, Stanislas Charles V.	Law 2	1161 St. Hubert St., Montreal, Que.
Bartlett, John Frederick	Ap. Sci. 1	5 Gilmour St., Ottawa, Ont.
Basken, B. Eileen C.	Arts 2 (B.Sc.)	350 Somerset St., Ottawa, Ont.
Bassen, Edward J.	Med. 5	251 King St. E., St. John, N.B.
Bastable, Ross W.	Ap. Sci. 4 (Me.)	96-44th. Ave., Lachine, Que.
Bates, Ralph Orville	Ap. Sci. 4 (Ci.)	Belle Isle Station, King's Co., N.B.
Batshaw, Harry	Arts P Law 1.	61 Parthenais St., Montreal, Que.
Bauman, Moses	Arts 1	55 Mozart St., Montreal, Que.
Baxter, Hamilton A.	Dent. 1	285 Hampton Ave., Montreal, Que.
Baxter, J. Murray	Med. 5	105 Union St. St. John, N.B.
Baxter, Stewart Gardner	Med. 1	285 Hampton Ave., Montreal, Que.
Beairsto, Everett, Benjamin	Med. 3	Malpeque, P.E.I.
Beall, Franklin George	Med. 5	327 Roslyn Ave., Westmount, Que.
Beardsley, James Murray	Med. 2	Wolfville, N.S.
Beattie, Marion Tennant	Arts 3	518 St. Joseph Blvd., Lachine, Que.
Beaubien, Louis Philippe	Com. 1	436 St. Catherine Rd., Outremont, Que.
Becker, Louis J.	Com. 3	Sydney, N.S.
Becking, John A.	Ap. Sci. 2	32 Wellington E., St. Sault Ste., Marie, Ont.
Beckwith, Grace Dean McLeod	Arts 3 (Hon.)	1423 Fernwood Rd., Victoria, B.C.
Bedee, Monroe Homer	Ap. Sci. 1	256 Cuvillier St., Montreal, Que.
Behan, Edmond Joseph	Med. 5	Pembroke, Ont.
Beinhaker, Israel	Dent. 1	1238 Clarke St., Montreal, Que.
Belanger, Edward	Med. 1	37 Daly Ave., Ottawa, Ont.
Belanger, Raphael	Apl Sci. 3	Valleyfield, Que.
Beliveau, Romeo Albert	Med. 3	43 Pierre St. Lewiston, Me.
Bell, Alan Stuart	Ap. Sci. 3 (Me.)	178 Chedoke Ave., Hamilton, Ont.
Bell, William Wilberforce	Med. 4	Edmonton, Alta.
Bender, Grace Laura	Arts P	620 Sherbrooke St. W., Montreal, Que.
Benjamin, Abraham	Ap. Sci. 2	1967 Jeanne Mance St., Montreal, Que.
Benjamin, Abraham	Dent. 3	371 Sanguinet St., Montreal, Que.
Benjamin, Ben	Med. 5	455 Clarke St., Montreal, Que.
Benett, Charles Morgan	Ap. Sci. 4 (El.)	7 Dufferin Ave., Brantford, Ont.
Bennett, James Gordon	Arts 1	Calumet, Que.
Bennett, William J.	Arts P	Vienna, Maryland, U.S.A.
Benson, Harry Gladstone	Dent. 1	Grates Cove, B.D.V., Nfld.,
Bercovitch, Rachel (Left Jan. 24th., 1922.)	Arts 1	302 Colonial Ave., Montreal Que.
Berkson, Aaron	Arch. 1	1549 Jeanne-Mance St., Montreal, Que.
Berinbaum, M.	Med. 2	473 Colonial Ave., Montreal, Que.
Berlind, Samuel Julius (Double Course.)	Arts 2 (B.Sc.)	3 Laval Ave., Montreal, Que.
Bernfield, William	Phar.	351 Edward Charles St., Montreal Que.
Bernstein, Jacob Clarence (Double Course.)	Arts 3 Med. 1	5 Tara Hall Ave., Montreal, Que.
Bernstein, Philip A.	Med. 1	5 Tara Hall Ave., Montreal, Que.
Bernstein, Ruth Gertrude	Arts P	5 Tara Hall Ave., Montreal, Que.
Bernstein, Saul H.	Dent. 2	1659 Jeanne Mance St., Montreal, Que.
Berridge, Winston W.	Ap. Sci. 1	635A Wellington St., Montreal, Que.
Berzan, David	Com. 2	2359 St. Denis St., Montreal, Que.
Bethel, John Percival	Arts 2	31 Market St. Nassau, N.P., Bahamas.
Betts, Randolph Cotgrave	Com. 1	204 Summit Circle, Westmount, Que.
Beveridge, William Wentworth	Med. 3	1899 Balsam St., Vancouver, B.C.

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Bickford, Andrew Arthur	Ap. Sci. 1	c/o New York Trust Co., 26 Broad St., New York, N.Y., U.S.A.
Bickford, John William	Med. 2	c/o Banco Americano, Guatemala City, Central America.
Bieler, Jacques Louis	Ap. Sci. 3 (Me.)	223 Milton St., Montreal, Que.
Biggar, P.E.	Ap. Sci. 4 (Me.)	Ottawa, Ont.
Bingham, Margaret Lillian	Com. 1	393 Somerset St., Ottawa, Ont.
Binmore, George Bedell	Ap. Sci. 4 (Chem.)	148 Northcliffe Ave., Montreal, Que.
Binns, George Frederick	Ap. Sci. 3 (Me.)	261 Melrose Ave., Montreal, Que.
Birbeck, Albert Franklin	Med. 3	231 Stanley St., Montreal, Que.
Birkett, Winifred Leighton	Arts 4 (Hon.)	252 Mountain St., Montreal, Que.
Bishop, Eric Gordon	Ap. Sci. 3 (Mi.)	Greenspond, Nfld.
Bishop, Gilbert	Arts 3 (B.Sc. Hon.)	Western Bay, Nfld.
Bishop, John Gordon	Ap. Sci. 3 (El.)	Cupids, Nfld.
Bishop, May Elizabeth	Arts P	454 Elm Ave., Westmount, Que.
Bissell, Harold Rudolph	Ap. Sci. 4 (Mi.)	Bell Bert Apts., George St., Toronto, Ont.
Bissett, Alice MacGowan	Arts 2	314 Broadway Ave., Lachine, Que.
Black, Murray Hugh	Ap. Sci. 4 (Me.)	Windsor, N.S.
Black, Margaret Hall	Arts P	735 Sherbrooke St. W., Montreal, Que.
Blackall, John Fenwick W	Ap. Sci. 3 (Me.)	St. John's, Nfld.
Blackburn, Melvin Roy	Dent. 3	28 Yarwood St., St. Thomas, Ont
Blackler, Chesley Frederick	Med. 2	St. John's, Nfld.
Blain, James George	Med. 3	32 Lansdowne Ave., Sault Ste. Marie, Ont.
Blampin, Winifred Alice	Med. 5	South Roxton, Que.
Bleau, Alphonse	Ap. Sci. 3 (Met. Eng.)	62, Ist. Ave., Maisonneuve, Que.
Bloomfield, Jacob	Ap. Sci. 3 (Me.)	1264 Cadieux St., Montreal, Que.
Bloomfeld, Maxwell Irving	Med. 2	724 St. Denis St., Montreal, Que.
Blumenfeld, Edward Alexander	Med. 3	1013 Clarke St., Montreal, Que.
Blumenstein, J. Harold	Arts 2	800 St. Dominique St., Montreal, Que.
Blumer, Benjamin Charles	Com. 1	34 Hutchison St. Montreal,.
Blundell, Stanley Frederic	Arts 2	154 Jeanne-Mance St., Montreal, Que.
Bolger, Andrew Allen	Arts 1 B. Sc	300 Hingston Ave., Montreal, Que.
Bonavitzky, Jack	Com. 1	1500 Esplanade Ave., Montreal, Que
Bonneville, Sydney	Ap. Sci. 4 (El.)	110 Osgood St., Ottawa, Ont.
Boon, George Arthur	Med. 4	Longueuil, Que.
Booth, Robert James	Arts 1	184 Bank St., Ottawa, Ont.
Boronow, Paul Walter	Ap. Sci. 4 (Chem. Eng.)	469 Victoria Ave., Westmount, Que.
Bourchard, J. Maurice	Ap. Sci. 1	1062 Delormier Ave., Montreal, Que
Boucher, Harold Hamlyn	Med. 2	Chilliwack, B.C.
Bouillon, Ernest Linden	Arch. 3	Paspebiac, Que.
Boulton, Beverley Knight	Ap. Sci. 1	5 College Court, Quebec, Que.
Bourgoin, Henri Edmond	Arts 3	2241 Bordeaux St., Montreal, Que.
Bourke, Edward Tennant	Dent. 3	42 Lorne Ave., Montreal, Que.
Bourke, William Manly	Law 1	42 Lorne Ave., Montreal, Que.
Bourne, Austin	Ap. Sci. 1	43 Third St., St. Lambert, Que.
Bourrett, Reggie	Med. 5	700 Mary Ann E., Montreal, Que.
Bowman, Frederick Basil	Med. 2	Southampton, Ont.
Bown, Charles Roy	Ap. Sci. 3 (Me.)	11 Ankerville St., Sydney, N.S.
Bown, William Edmund	Ap. Sci. 3 (Chem. Eng.)	11 Ankerville St., Sydney, N.S.
Boyce, John Clifford	Med. 3	317-11th., Ave., Calgary, Alta.
Boyd, Arthur James	Ap. Sci. 1	23 Linden Ave., Victoria, B.C.
Boyd, David	Ap. Sci. 1	122 George V. Ave., Lachine, Que.
Boyd, Herbert William	Arts 1	122 George V. Ave., Lachine, Que.
Boyd, John Huntley	Med. 3	River Bourgeois, N.S.
Boyd, Jessie Marion	Med. 5	4253 Dorchester St. W., Westmount,
Boyle, Ernest Sterling	Med. 4	Wallace, N.S.
Boyle, Joseph Edgar	Med. 2	277 Bronson Ave., Ottawa, Ont. Que

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Boyes, Watson	Arts 2	111 Prince Arthur St. W., Montreal, Que.
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Bradshaw, Frederick Wykeham	Ap. Sci. 3 (Chem. Eng.)	823 University St., Montreal, Que.
Bradshaw, Gordon Rothwell	Ap. Sci. 3 (Mi.)	102 Silica St., Nelson, B.C.
Braithwaite, E. Edward (Left Oct. 1921.)	Ap. Sci. 2	125 Quebec St., Sherbrooke, Que.
Branch, Campbell William	Arts P	4 St Mary's St., St. John's, Antigua.
Branscombe, Arthur Forrester	Ap. Sci. 1	100 Fort St., Apt. 4, Montreal, Que.
Brault, Maglore Joseph	Arts P	Cranbrook, B.C.
Bray, Alton Charles	Ap. Sci. 2	2201 Christopher Columbus St., Montreal, Que.
Breitman, Harry B	Med. 5	273 Laval Ave., Montreal, Que.
Breitman, Ruben	Med. 3	1929 Esplanade Ave., Montreal, Que.
Bremner, Douglas Orrin	Ap. Sci. 1	374 Roslyn Ave., Westmount, Que.
Brenchley, Charles	Com. 2	3351 Granville St., Vancouver, B.C.
Brewer, Wendell Baxter	Com. 2	Cobalt, Ont.
Brisbane, William Gordon	Ap. Sci. 3 (Ci.)	452 Strathcona Ave., Westmount, Que.
Brittain, A. Code	Com. 2	233 Gilmour St., Ottawa, Ont.
Brock, Malcolm Ray	Arts 1. (B.Sc.)	Danville, Que.
Broderick, J. Vincent	Dent. 4	Cornwall, Ont.
Brodeur, Jean. Charles (Left Nov. 1921.)	Ap. Sci. 3 (Mi.)	229 Chapel St., Ottawa, Ont.
Brodeur, J. P (Left early in session.)	Ap. Sci. 3 (Ci.)	1097 St. Denis St., Montreal, Que.
Brodie, Ian Hamilton	Med. 4	648-11th, St., S. Lethbridge, Alta.
Bromilow, Edmund Grant	Ap. Sci. 1	Box 275, Sta. B., Montreal, Que.
Bronson, Harvey Nicol	Arts 1	133 Erie Ave., Hamilton, Ont.
Brooks Charles Lennox	Ap. Sci. 4 (Chem. Eng.)	4025 Dorchester St. W., Westmount, Que.
Brooks, Margaret Scott	Arts 2	4025 Dorchester St. W., Westmount, Que.
Brouse, Ivan Edwin	Med. 5	Hotel Vancouver, Vancouver, B.C.
Brough, Frank Sheldon	Ap. Sci. 3 (El.)	48 Windsor Ave., Westmount, Que.
Brown, Allyn Wynne	Med. 3	221 Wilson Ave., Montreal, Que.
Brown, Colin Blair	Ap. Sci. 2	613 First Ave., Quebec, Que.
Brown, Edmund Vere	Ap. Sci. 4 (El.)	c/o W. P. Moss, Roslyn Rd., Winnipeg, Man.
Brown, Frank Meikle	Med. 3 Arts P	Carman, Man.
Brown, Francis Trapp (Double Course.)	Arts 4 Med. 2	Kamloops, B.C.
Brown, George Basil	Ap. Sci. 4 (Chem. Eng.)	614 Sherbrooke St. W., Montreal, Que.
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Brown, James Lloyd	Med. 1	2302 Scarth St., Regina, Sask.
Brown, Lawrence Elliot	Arch. 4	149 Carling Ave., Ottawa, Ont.
Brown, Lawrence Wilmott	Med. 3	204 Daly Ave., Ottawa, Ont.
Brown, Marguerite Campbell	Arts 2	Ayer's Cliff, Que.
Brown, Ronald Earl (Double Course.)	Arts 3 Med. 1	Hougton, Sask.
Browne, James Carlyle Graham	Com. 2	357 Melville, Ave. Westmount, Que.
Browne, John Symonds Lyon (Double Course.)	Arts 1	380 Elm Ave., Westmount, Que.
Browne, Trevor Goff	Med. 5	Melville, Sask.
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Bruger, Moses	Arts 1 (B.Sc.)	1449 Clarke St., Montreal, Que.
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Bryce, Lawson E	Com. 2	186 Quebec St., Sherbrooke, Que.
Brunet, Agénor	Dent. 1	Valleyfield, Que.
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Buchanan, William D. H	Ap. Sci. 2	Gould, Que.
Buckley, Frank Joseph	Med. 4	Gloucester, Jct., N.S.
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Buller, Francis Hamilton	Ap. Sci. 3 (El.)	147 Bishop St., Montreal, Que.
Bullock, Theodore L (Double Course.)	Med. 1 Arts 2	Roxton Pond, Que.
Buraschi, Carlos F	Ap. Sci. 1	Lima, Peru, S.A.
Burke, Hugh E	Med. 4	Little Metis Beach, Que.
Burke, Thomas V	Com. 3	348 Bronson Ave., Ottawa, Ont.
Burke, Walter Edward	Med. 4	43 Huntress St., Portland Me.
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Burroughs, Reginald William N.	Ap. Sci. 2	2628 Jeanne-Mance St., Montreal, Que.
Burrows, Norman Andrew	Arts 2	Central Y.M.C.A., Montreal, Que.
Burton, Thomas Edwin	Dent. 4	Cookshire, Que.
Burwell, William Keith	Med. 2	Renfrew, Ont.
Bush, Harold Frederick	Ap. Sci. 4 (El.)	558 Bay St., Ottawa, Ont.
Bushell, Winston	Dent. 2	150 Cote St. Antoine Rd., Westmount,
Bustin, Howard Barlow	Med. 3	158 St. James St., St. John, N.B.
Bustin, Marion	Arts 1	158 St. James St., St. John, N.B.
Butler, Beryl Meredith St. Elmo	Ap. Sci. 1	Lennoxville, Que., R.M.D. No. 1.
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Buzzell, Henry Walter	Ap. Sci. 2	Abbotsford, Que.
Buzzell, Leslie Norman	Com. 2	Abbotsford, Que.
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Cabana, David L	Law 1	1265 Cadieux St., Montreal, Que.
Calder, James Caswell	Arts 4	Lachute, Que.
Caldwell, Charles Edward	Ap. Sci. 3 (Me.)	Brigus, Conception Bay, Nfld.
Caldwell, John Ewart	Med. 3	Welland Apts., Frank St., Ottawa, Ont.
Caldwell, William Stewart	Law 3	737 Shuter St., Montreal, Que.
Callaghan, Frank	Law 2	Charlottetown, P.E.I.
Callahan, Lloyd Franklin	Law 3 Arts P	Casselton, North Dakota, U.S.A.
Calvert, Robert Martin (Left Jan. 23rd. 1922.)	Com.3	122 Havelock St., Toronto, Ont.
Cameron, Alice Virgina	Arts 1	c/o C. S. Cameron, Comte St., Montreal, Que.
Cameron, Margaret Burnside (Double Course.)	Arts 2	384 Lansdowne Ave., Westmount, Que.
Campbell, Andrew Keith	Arts 1	Ormstown Que.
Campbell, Edith Dixon	Arts 3	59 Columbia Ave., Westmount, Que.
Campbell, Edith Margaret	Arts 3 (B.Sc.)	190 Baysville Ave., Ottawa, Ont.
Campbell-Brown, Hugh Ivie	Med. 1	Vernon, B.C., R.R. No. 1.
Campbell, Frank Robinson	Ap. Sci. 2	New Devon, B.C.
Campbell, Gordon Douglas	Arts 1 (B.Sc.)	123 Crescent St., Montreal, Que.
Campbell, Hugh Stanley	Com. 2	371 Grosvenor Ave., Westmount, Que.
Campbell, Laurette A	Arts 3 (Hon.)	161 Selby St., Westmount, Que.
Campbell, Hardie Simpson	Med. 4	Chesley, Ont.
Canning, Mary Kathleen	Arts 3 (B.Sc.)	321 Roslyn Ave., Westmount, Que.
Cantley, Donald Fraser	Arts 3 (B.Sc. Hon.)	New Glasgow, N.S.
Capelovitch, Victor	Phar.	1350A Cadieux St., Montreal, Que.
Caplan, David	Phar.	1645 Jeanne Mance St., Montreal, Que.
Caplan, Israel Arthur	Med. 1	731B. Cadieux St., Montreal, Que.
Caplan, Samuel Lyon	Com. 3	756 Notre Dame St. W., Montreal, Que.
Carberry, John Edward D	Law 2	Grenada, B.W.I.
Carl, Selma C	Arts 1	88 St. Luke St., Montreal, Que.
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Carscallen, William Franklin	Med. 5	35 Argyle Ave., Ottawa, Ont.
Carsley, Muriel Grace	Arts P	31 Macgregor St., Montreal, Que.
Carsley, Samuel Haberer	Ap. Sci. 3 (Chem. Eng.)	31 Macgregor St., Montreal, Que.
Carson, Cecil Edward	Ap. Sci. 4 (Chem. Eng.)	Dorval, Que.
Carter, John Wilbert	Dent. 3	Salisbury, N.B.
Carter, Wyatt Edward	Com. 2	953 Dorchester St. W., Montreal, Que.
Cartwright, George Herbert	Ap. Sci. 4 (Ci.)	Croydon, Surrey, Eng.
Carver, John Kenneth	Dent. 3	1669 Church Ave., Montreal, Que.
Cashin, Martin Francis	Med. 4	St. John's, Nfld.
Caselman, Hyman	Med. 2	992 Cadieux St., Montreal, Que.
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Caswell, Arnold Perley	Com. 3	370 Durocher Ave., Outremont, Que.
Caswell, Clarence Fowler	Ap. Sci. 1	Windsor Mills, Que.
Caza, Gerald	Dent. 1	Saint-Anicet, Que.
Center, Ervin Alfred	Med. 4	Lachute, Que.
Chabot, Arthur-John	Ap. Sci. 1	475 Durocher Ave., Outremont, Que.
Chait, Samuel	Arts 1	53 Mozart St., Montreal, Que.
Chalk, Mary Laura	Arts 1	4951 Western Ave., Westmount, Que.
Chalker, C. Richard	Ap. Sci. 1	Lake View Ave., St. John's, Nfld.
Challenger, Cecil Avelyn	Dent. 2	Basseterre, St., Kitts, B.W.I.
Chalmers, Frank Burne	Med. 2	1927 Angus St., Regina, Sask.
Chamberlain, Aubrey Robert	Com. 2	462 Indian Rd., Toronto, Ont.
Champion, Cecil Hugh	Ap. Sci. 3 (Ci.)	Chateauguay Basin, Que.
Champagne, Maurice	Arch. 3	Provincial Bank, Hull, Que.
Chan, Qui Hin	Med. 3	352 Fisgard St., Victoria, B.C.
Charbonneau, Jules-Henri (Left Nov. 21st. 1921.)	Ap. Sci. 1	9 Hope Ave., Montreal, Que.
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Charland, Walter Edgar	Dent. 2	1137 Wellington St., Montreal, Que.
Charles, Ethelbert D. B	Med. 2	St. Georges, Grenada, B.W.I.
Charlton, Alice Ernestine	Arts 1	391 Wiseman Ave., Outremont, Que.
Charness, Isidore	Law 1	768 City Hall Ave., Montreal, Que.
Chase, Wallace Leslie	Arts 2 (B.Sc.)	Barbados, B.W.I.
Chasney, William S.	Med. 5	1047 Aberdeen Ave., Winnipeg, Man.
Chauvin, Frank-Bernard	Law 1	720 Maplewood Ave., Montreal, Que.
Chauvin, Stanley-B.	Arts P	1320 Mt. Royal Blvd., Outremont, Que.
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Chesley, Arthur Sharp	Med. 4	69 Clarendon St., St. John, N.B.
Chestnut, Walter Oswald	Med. 4	Sussex, King's Co., N.B.
Childs, Mary	Med. 5	129 Bishop St., Montreal, Que.
Chipman, Ernest LeRoy	Ap. Sci. 3 (Ci.)	Port William, N.S.
Chisholm, Colin Angus	Med. 3	Antigonish, N.S.
Chisholm, Daniel Neil	Med. 3	Port Hastings, N.S.
Chisholm, Gavin William	Med. 2	35 Aberdeen Ave., Westmount, Que.
Chisholm, Joseph Donald	Ap. Sci. 3 (El.)	Antigonish, N.S.
Chorney, Melvin Mendel	Ap. Sci. P (Chem. Eng.)	994 Cadieux St., Montreal, Que.
Clark, George S.	Ap. Sci. 4 (Me.)	Lachute, Que.
Clark, Horace Henry	Phar.	Lennoxville, Que.
Clark, Hugh Stuart	Arts 3 (Hon.)	Kincardine, Ont.
Clark, Stanley Killam	Med. 5	Kamsack, Sask.
Clarke, Austin M.	Med. 3	Newcastle, N.B.
Clarke, Edward Lawrence	Ap. Sci. 4 (El.)	202 Harvard Ave., Montreal, Que.
Clarke, Ira Wallace	Ap. Sci. 4 (Chem. Eng.)	Bear River, N.S.
Clarke, Percy Maxwell	Dent. 3	Newcastle, N.B.
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Cleland, John George P.	Med. 3	Penticton, B.C.

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Cleveland, Edward Thorburn	Dent. 3	7 Lorne Ave., Montreal, Que.
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Cloutier, Elfrid-B	Phar	Roxton Pond, Que.
Cloutier, George-Edwin-Joseph	Ap. Sci. 4 (Chem. Eng.)	2339 Park Ave., Montreal, Que.
Coady, Gerald Edward	Com. 1	883A Durocher St., Montreal, Que.
Cochran, Thomas Patrick	Ap. Sci. 2	Stoodley Knowle, Torquay, Eng.
Cochran, William Charles	Ap. Sci. 1	Sidney, B.C.
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Codrington, Herbert R	Law 1	22 Second St., Georgetown, B.G.
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Cohen, Harry Aaaron	Med. 1	89 Dorchester St., Montreal, Que.
Cohen, Jacob	Med. 2	566 St. Dominique St., Montreal, Que.
Cohen, Lawrence Z	Arts P Law 3	25 Rosemount Ave., Westmount, Que.
Cohen, Nathan	Phar	494 Clarke St., Montreal, Que.
Cohen, Shirley Mildred	Arts 1	Lanark, Ont.
Colby, Doris G	Arts 1	2197 Esplanade Ave., Montreal, Que.
Cole, Frederick Robert	Arts P	214 Bonaccord St., Moncton, N.B.
Coler, Eugene Seeley	Med. 5	149 Drummond St., Montreal, Que.
Collins, Frederick Thomas	Law 1	305 Grosvenor Ave., Westmount, Que.
Collins, Hugh Allan	Med. 3	S. W. Margaree, Inverness, N.S.
Collins, Stanley Ralph	Arts 4	Brigham, Que.
Connell, Gerald P	Ap. Sci. 3 (Chem. Eng.)	522 Gladstone Ave., Ottawa, Ont.
Connor, Charles Frederick	Com. 2	12 Melgurd Ave., Ottawa, Ont.
Conner, Gordon Myron	Ap. Sci. 1	32 Queen St., Sherbrooke, Que.
Conrad, Egbert Victor	Med. 2	East La Have, N.S.
Conroy, Louis O'Neill	Med. 2	"Rahun" Allandale St., St. John's, Nfld.
Consiglio, Franco	Arch. 2	90 Milton St., Montreal, Que.
Cook, Maynard Stephen	Med. 4	33 Melgund Ave., Ottawa, Ont.
Cooke, Arthur Selwyn	Arch. 1	153 Stanley St., Montreal, Que.
Cools, David Parker	Dent. 1	239 Archibald St., Moncton, N.B.
Cooney, George Edward	Arts P	250 Cooper St., Ottawa, Ont.
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Cooper, Hugh C.D.	Arch. 3	Petherton, Truro, England.
Cooper, Paul Emerson	Ap. Sci. 3 (Ci.)	66 Robert St., Ottawa, Ont.
Cooper, Jack Roland	Ap. Sci. 2	Peruvian Corporation Ltd., Lima, Peru.
Cooper, Yetta	Arts 1	285 De L'Epée, Ave., Montreal, Que.
Cope, Edward Selby	Ap. Sci. 2	460 Wood Ave., Westmount, Que.
Cope, Francis Campbell	Arts 2	460 Wood Ave., Westmount, Que.
Copeland, John Gardner	Med. 5	Cornwall, Ont.
Copeland, Newall	Med. 5	Cornwall, Ont.
Copland, Edward Bruce	Arts 4 (Hon.)	4307 Montrose Ave., Westmount, Que.
Corbett, Thomas Eldridge	Med. 5	Edmonton, Alta.
Corbett, William Edward P	Med. 1	Fairfield House, Alphington Rd., Exeter, Eng.
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Craik, Stanley Oliver	Ap. Sci. 3 (El.)	Melbourne, Que.
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Cram, Maxwell A.	Ap. Sci. 1	Green's Harbour, Nfld.
Crane, John Halliday	Ap. Sci. 4 (Chem. Eng.)	c/o Dominion Bank, Peterborough, Ont.
Crawford, Edwin Minter (Double Course.)	Arts 4 Med. 2	Pointe Claire, Que.
Crawford, Robert Eric A	Ap. Sci. 4 (Me.)	410 Jeanne-Mance St., Montreal, Que.
Creelman, Clifford E.	Com. 2	Georgetown, Ont.
Cregeen, Kenneth Thomas	Ap. Sci. 3 (El.)	1 Metcalfe St., Montreal, Que.
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Crestohl, Max N	Arts 3 (Hon.)	1600 Esplanade Ave., Montreal, Que.
Crewson, Dr	Med. Special	
Crewson, Arthur Llewellyn	Med. 4	Alexander, Ont.
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Cromwell, A. Ross	Ap. Sci. 3 (Ci.)	Cookshire, Que.
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Crowe, Albert Douglas	Dent. 4	416 Mackay St., Montreal, Que.
Crowe, Marguerite	Med. P	856 Lorne Crescent, Montreal, Que.
Crown, Isidore	Ap. Sci. 1	1656 Jeanne-Mance St., Montreal, Que.
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Culpeper, Bernard Armel	Ap. Sci. 3 (Ci.)	194 Villeneuve St. W., Montreal, Que.
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Cunningham, Ernest Kenneth	Med. 1	Carman, Manitoba.
Curbelo, Pablo	Med. 3	Arecibo, Porto Rico.
Currie, George R.	Com. 2	427 Third Ave. N., Saskatoon, Sask.
Curtis, Edwin Johnston	Med. 4	2406-5th. Ave. W., Vancouver, B.C.
Curtis, Harry Croyle	Med. 3	Somerset, Bermuda.
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Daly, Hector William	Law 1	61 Aberdeen Ave., Westmount, Que.
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Davis, Aaron	Med. 5	39 Prince Arthur St. E., Montreal, Que
Davis, Charles Freeman	Arts 4	Freshwater, Nfld.
Davis, Hugh Peter	Med. 1	49 Pearl St. W., Brockville, Ont.
Davis, Laura Sophronia	Arts 1	Arundel, Que.
Davis, Roberts Samuel	Com. 1	157 Pretoria Ave., Ottawa, Ont.
Davis, Sydney Herbert	Ap. Sci. 4 (Mi.)	157 Pretoria Ave., Ottawa, Ont.
Davis, William Wallace	Ap. Sci. 3 (Met. Eng.)	37 Arthur St., Ottawa, Ont.
Dawson, Katherine Henderson	Arts 2	21 Bellevue Ave., Westmount, Que
Dawson, Nathan Henry	Med. 4	Truro, N.S.
Day, Edwin Ethelbert	Med. 3	354-15th. Ave. W., Vancouver, B.C.
Deavitt, John Bromilow	Dent. 2	1631 Bloor St. W., Toronto, Ont.
de Belle, John Ernest	Med. 2	202 Dupuis Ave., Montreal, Que.
de Belle, Louis Charles	Arts 1	202 Dupuis Ave., Montreal, Que.
deBurr, Stephen L	Dent. 2	3096 Decatur Ave., New York, N.Y.
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Mackay, William Angus	Med. 4	Paynton, Sask.
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Robertson, Margaret Armour	Arts 1	136 Mansfield St., Montreal, Que.
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Robillard, Antoine B	Med. 4	Abbotsford House, Abbotsford, Que.
Robillard, Matthew Joseph	Med. 4	195 Nicholas St., Ottawa, Ont.
Robins, Jeannie Dougall	Arts 2	314 Metcalfe Ave., Westmount, Que.
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Robinson, Jonathan	Law 2	Waterloo, Que.
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Roby John (Left Nov. 17th. 1921.)	Law 1	1350 St. Urbain St., Montreal, Que.
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Rolleston, Philip Reginald	Ap. Sci. 1	Onderneeming Industrial School, Suddie, Essequebo, Br. Guiana.
Rooke, Daphne Frances	Arts 3 (Hon.)	268 St. Luke St., Montreal, Que.
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Root, Stephen Eastman	Ap. Sci. 3 (Ci.)	4219 Western Ave., Westmount, Que.
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Rosenbaum, Wilfrid	Med. 4	475 St. James St., Montreal, Que.
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Rosenstein, Murray	Med. 1	157 East St., Sault Ste. Marie, Ont.
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Salmon, Julius (B.Sc.)	Arts 1	544 Cadieux St., Montreal, Que.
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Talbot, Leonidas	Med. 1	27 St. Henry St., Hull, Que.

NAME	FACULTY AND YEAR	HOME ADDRESS
Tanenbaum, Hyman John	Phar.	474 Champagneur St., Outremont, Que.
Tanner, Charles William	Dent. 3	1917 Angus St., Regina, Sask.
Tanzman, Joseph	Med. 1	22 Clarence St., St. John, N.B.
Taprell, William Rees	Com. 2	823 Royal Ave., Calgary, Alta.
Tarshis, Anne	Med. 4	187 Bloomfield Ave., Outremont, Que.
Taschereau, Rogers Harwood	Ap. Sci. 3 (Mi.)	341C Kenniston Apts., Elgin St., Ottawa, Ont.
Tatleman, Maurice	Arts 1	435 Henri Julien Ave., Montreal, Que.
Tatley, Herbert Baptist	Ap. Sci. 1	45 Durocher St., Montreal, Que.
Tatley, Lambert David	Ap. Sci. 4 (Chem. Eng.)	49 Belvedere Rd., Westmount, Que.
Taylor, Clarence Wesley	Ap. Sci. 3 (Me.)	Box 182, Carberry, Man.
Taylor, Edward Plunket	Ap. Sci. 4 (Me.)	26 McTavish St., Montreal, Que.
Taylor, Eric Owen	Med. 3	Ladner, B.C.
Taylor, John Ellis	Ap. Sci. 4 (Chem.)	228 Guilford St., St. John W., N.B.
Taylor, John Neil	Med. 1	Almonte, Ont.
Taylor, Lorne Elson	Ap. Sci. 2	53a Victoria Ave., Longueuil, Que.
Taylor, Morrison Barns	Ap. Sci. 2	1333 Lansdowne Ave., Toronto, Ont.
Taylor, Robert Donald	Law 2	107 Cote St. Antoine Rd., Westmount, Que.
Taylor, St. Elmo Edward	Med. 2	87 Lexington Ave., Brooklyn, N.Y.
Taylor, Wade Alexander	Com. 1	Grand Falls, N.B.
Taylor, Willard Davidson	Ap. Sci. 1	14 McDougal Ave., Ottawa, Ont.
Teakle, Cecil Thomas	Arts 2	4063 Dorchester St., Westmount, Que.
Teed, Dorothy Isobel	Arts 4	119 Hazen St., St. John, N.B.
Teggart, Dorothy May (Double Course.)	Arts 4 Med. 2	32 St. Luke St., Montreal, Que.
Teitelbaum, Michael Henry	Med. 3	565 Drolet St., Montreal, Que.
Terrance, Emmett Howard	Ap. Sci. 3 (El.)	538 King Edward Ave., Ottawa, Ont.
Terroux, Fernand Richard	Arts 1 (B.Sc.)	129 Crescent St., Montreal, Que.
Terry, Kingsley	Med. 3	1220 St. James St., Victoria, B.C.
Thaw, Daniel	Med. 2	315 St. Dominique St., Montreal, Que.
Thibaudeau, Pierre Alfred	Law 3	Beauharnois, Que.
Thomas, James Ernest	Dip. Public Health	45 St. James St., Longueuil, Que.
Thompson, Cecil E	Ap. Sci. 4 (Ci.)	157 Frank St., Ottawa, Ont.
Thompson, Clifford Shaw	Med. 3	North Sydney, N.S.
Thompson, Eustace Edmund	Med. 5	35 Bent St., Georgetown, Br. Guiana.
Thompson, Wendell W (Died Jan. 18th. 1922.)	Med. 3	Point la Nim, N.B.
Thomson, Helena Barbara	Arts 2	5229 Sherbrooke St. W., Montreal, Que.
Thomson, Richard	Ap. Sci. 1	R.M.D. No. 1, Saanichton, B.C.
Thurber, Donald Stuart	Med. 3	Millerton, N.B.
Thurston, Willard Geddes	Med. 4	Maple Creek, Sask.
Tidmarsh, Clarence Johnston	Med. 3	Charlottetown, P.E.I.
Timmins, Leo Henry	Ap. Sci. 2	99 Gordon Crescent, Westmount, Que.
Timmis, Harold Gordon	Ap. Sci. 3 (Me.)	269 Bloomfield Ave., Passaic, N.J.
Tinkess, Donald Ewing	Med. 3	Cleveland Bldg., Watertown, N.Y.
Toker, Maxwell H	Dent. 2	1570 Esplanade Ave., Montreal, Que.
Tombs, Laurence Chalmers	Arts 2	503 Mt. Pleasant Ave., Westmount, Que.
Toole, Francis James	Ap. Sci. 3 (Chem. Eng.)	1 Orleans Rd., Hornsey Lane, Highgate, London N. 19, Eng.
Toplitsky, Jack	Dent. 2	66a Laurier Ave. W., Montreal, Que.
Trapp, Ethlyn	Med. 1	New Westminster, B.C.
Tremain, Albert Edward D	Com. 2	Kingscroft, Windsor, N.S.
Trenholm, George Henry	Ap. Sci. 2	601 Clarke Ave., Westmount, Que.
Trites, Albert Edward	Med. 3	Salisbury, N.B.
Troop, George Robert Ferrier	Com. 2	376 Metcalfe St., Ottawa, Ont.
Tucker, Bryant Burgess	Ap. Sci. 4 (Me.)	King's Nympton, Chumleigh, N. Devonshire, Eng.
Tuffy, Magdalen E	Arts 4 (Hon.)	Cobden, Ont.
Turcotte, Edward John	Arch. 3	1563 Hutchison St., Montreal, Que.
Turley, Regina Mary	Arts 1	Frankford, Ont.

NAME	FACULTY AND YEAR	HOME ADDRESS
Turnbull, Andrew Rutherford	Ap. Sci. 3 (Met. Eng.)	934 James St., Niagara Falls, N.Y.
Turner, Arthur Lawrence	Arts 3 (Hon.)	13 Mount Pleasant, Liverpool, Eng.
Turpel, William Nicholson	Med. 3	2551 Quadra St., Victoria, B.C.
Tyler, Albert John	Com. 3	159 Vendome Ave., Montreal, Que.
Urquhart, Robert Glen	Med. 3	100 St. Cross St., Revelstoke, B.C.
Usher, Abe	Com. 1	382 Metcalfe Ave., Westmount, Que.
Usher, Barney D	Med. 5	382 Metcalfe Ave., Westmount, Que.
Usher, Cecil	Com. 1	382 Metcalfe Ave., Westmount, Que.
Usher, Peter Joseph	Law 1	1509 Jeanne Mance St., Montreal, Que.
VanEtten, Fred Bouton	Arch. 5	156 Wall St., Kingston, N.Y.
Vango, Harold Main	Med. 4	56 Talbot St., Bayswater, London, Eng.
Vanier, Emilien	Arts P	St. Jerome, Que.
VanVliet, George Lyman	Arts 3	Lacolle, Que.
Vaughan, James Minton	Med. 4	105 Lorraine Ave., Mt. Vernon, N.Y.
Vaz, Clarence	Med. 1	Kingston, Jamaica, B.W.I.
Velasco, Edward M	Ap. Sci. 3 (Me.)	Cuzco, Peru, S.A.
Vernot, George Edward	Ap. Sci. 1	293 St. George St., Montreal, Que.
Vezina, Frank A	Arts 1 (B.Sc.)	119 Desery St., Montreal, Que.
Vickerson, George Locker	Ap. Sci. 1	2477 Hutchison St., Montreal, Que.
Vineberg, Arthur M (Double Course.)	Arts 2 (B.Sc.)	324 Elm Ave., Westmount, Que.
Vineberg, Charles Sydney	Ap. Sci. 1	5 Dorchester St. E., Montreal, Que.
Vineberg, Harry G (Left Nov. 16th. 1921.)	Com. 1	892b City Hall Ave., Montreal, Que.
Vineberg, Norman M	Med. 3	1518 Jeanne Mance St., Montreal, Que.
Vittie, Keith Cairns	Phar	21 St. Mark St., Montreal, Que.
Vrooman, Harold William	Ap. Sci. 3 (Chem. Eng.)	109 Kildare Rd., Walkerville, Ont.
Vallieres, Joseph Leon	Med. 3	57 Centre St., Biddeford, Maine.
Wachowicz, Victoria Frances	Arts P	Skars, Alta.
Wade, Roberr S	Med. 3	Renfrew, Ont.
Wadsworth, Gordon Campbell	Arts 3 (Hon.)	2038 Jeanne Mance St., Montreal, Que.
Wain, Eric James	Ap. Sci. 4 (Ci.)	109 St. James St., St. Lambert, Que.
Wainer, Isidore	Arts 2	113 St. Dominique St., Montreal, Que.
Wait, Eric Holloway	Ap. Sci. 4 (Met. Eng.)	55 Drummond St., Montreal, Que.
Wait, Frederick Elmer	Med. 4	814 Saskatchewan Crescent, E., Saskatoon, Sask.
Waldman, Herbert	Com. 1	147 St. Luke St., Montreal, Que.
Walker, Douglas William	Med. 3	6150 Sherbrooke St., Westmount, Que.
Walker, Francis Roberts	Com. P	12 Sunnyside Rd., Westmount, Que.
Walker, William Edwin	Arts P	599 Dorchester St. W., Montreal, Que.
Walker, W. Wallace	Arts 1	L'Orignal, Ont.
Wall, John Joseph	Med. 2	332 Flora St., Ottawa, Ont.
Wallace, Arthur William	Ap. Sci. 1 (Arch.)	6 Ravenscliffe Ave., Hamilton, Ont.
Wallace, Frank Wilbert	Med. 4	Box 622, Nelson, B.C.
Wallace, Norman Harold	Com. 3	610 Carleton Ave., Westmount, Que.
Walsh, Eva Mary	Arts 1	469 Mackay St., Montreal, Que.
Walsh, Muriel Helena	Arts 1	Waldorf Apts., Grosvenor Ave. Westmount, Que.
Walsh, Ronald Joseph	Med. 3	408 Park St., Montreal, Que.
Walter, Felix Harold	Arts 3 (Hon.)	635 University St., Montreal, Que.
Walters, Albert Robert	Med. 2	P.O. Box 271, Lennoxville, Que.
Wankelyn, David Angus	Ap. Sci. 2	241 Drummond St., Montreal, Que.
Ward, Clifford Vincent	Med. 2	Waterville, Que.
Ward, Peter Dennis	Med. 3	65 City Councillors St., Montreal, Que.
Ward, Richard Vance	Med. 3	825 de l'Epée Ave., Outremont, Que.
Wardleworth, Phil Hatton	Ap. Sci. 1	168 Cote St. Antoine Rd., Westmount, Que.

NAME	FACULTY AND YEAR	HOME ADDRESS
Warren, Geoffrey McDougal	Ap. Sci. 1	707 Drummond Bldg., Montreal, Que.
Warren, Francis Bishop	Ap. Sci. 2	82 Wineva Ave., Toronto, Ont.
Warren, William Adelbert	Ap. Sci. 2	8, 11th. Ave., Lachine, Que.
Watkins, Ellie	Arts P	453 Sherbrooke St. W., Montreal, Que.
Watson, Charles Arthur	Med. 4	1157 Rockland Ave., Victoria, B.C.
Watson, Edgar Robert	Med. 5	Box 85, Hawkesbury, Ont.
Watson, Edmond Evelyn	Ap. Sci. 1	New Yarmouth, Race Course P.O. Jamaica, B.W.I.
Watson, Leigh Alexander	Com. 2	Thamesville, Ont.
Watt, Elsie Gowans	Arts 2 (B.Sc.)	24 Maple Ave., Ste. Anne de Bellevue, Que.
Watt, Leslie Alexander	Ap. Sci. 4 (Arch.)	Ste. Anne de Bellevue, Que.
Waxman, Abe	Med. 4	866 Cadieux St., Montreal, Que.
Way, Joseph Harold Gosling	Law 2	Bonavista, Nfld.
Weames, Albert J	Ap. Sci. 1	566 Maitland St., London, Ont.
Webster, Bruce P	Med. 3	Lansdowne, Ont.
Webster, Colin W	Arts 2	7 Edgehill Rd., Montreal, Que.
Webster, Gordon, M	Arts 4 (Hon.)	478 Roslyn Ave., Westmount, Que.
Webster, John C	Com. 3	Shediac, N.B.
Webster, Leith H	Med. 3	Marie, P.E.I.
Webster, Robert Chilion P	Ap. Sci. 3 (Me.)	196 Metcalfe St., Ottawa, Ont.
Weibel, Louise Esther	Law 2	35 Souvenir Ave., Montreal, Que.
Weiman, Maurice	Dent. 1	567 Laval Ave., Montreal, Que.
Weir, Ronald Stanley	Arch. 1	536 Sherbrooke St. W., Montreal, Que.
Weisberg, Hyman Maurice	Med. 1	1227 St. Lawrence Blvd., Montreal, Que.
Weisburg, Casper	Ap. Sci. 2	1395 St. Dominique St., Montreal, Que.
Weisman, Ellis S	Law 3	Sudbury, Ont.
Weitzer, Saul	Ap. Sci. 1	119 Lewis Ave., Westmount, Que.
Weldon, Thomas Herbert	Ap. Sci. 4 (Mi.)	636 Dorchester St. W., Montreal, Que.
Wells, Hubert	Arts 3 (Hon.)	Wesleyville, Nfld.
Wells, Thomas James	Med. 5	Rock Island, Que.
Wener, William Victor	Med. 1	1127 Clarke St., Montreal, Que.
Wershof, Stanley Mendel	Med. 5	9515, 101 Ave., Edmonton, Alta.
Wert, Forde Bush	Med. 3	Ottawa, Ont.
Wetmore, Douglas Stevenson	Ap. Sci. 3 (Chem. Eng.)	Truro, N.S.
Wevrick, Nathan (Double Course.)	Arts 2 (B.Sc.)	489a Henri Julien Ave., Montreal, Que.
Wevrick, Solomon	Arts 2	489a Henri Julien Ave., Montreal, Que.
Wheeler, John Rodney (Left Oct. 31st. 1921)	Arts P	Knowlton, Que.
Whelen, Peter Graeme	Arts P	260 Somerset St., Ottawa, Ont.
Whidden, Robert Wallace	Med. 2	805 Linden Ave., Victoria, B.C.
White, Charles Percy	Ap. Sci. 2	Sussex, N.B.
White, David de Jersey (Double Course.)	Arts 1	597 Union Ave., Montreal, Que.
White, George M	Med. 3	Box 116, Marysville, N.B.
White, Harold	Arts 4	756 University St., Montreal, Que.
White, William John	Ap. Sci. 1	24 St. Helen St., Montreal South, Que.
Whitebread, John	Med. 5	Nelson, B.C.
Whitehead, Jocelyn Gordon	Ap. Sci. 1	Box 134, Kelowna, B.C.
Whiteside, William Carleton	Med. 1	Box 526, Victoria, B.C.
Whiting, Richard Charles	Med. 4	177 James St. S., Hamilton, Ont.
Whitley, Harry Thomas C	Med. 4	160 Cooper St., Ottawa, Ont.
Whitmore, Cecil H	Arts 3	Maxville, Ont.
Whithall, Ralph L	Ap. Sci. 1	544 Roslyn Ave., Westmount, Que.
Whittemore, Carl Raymond	Ap. Sci. 3 (Met. Eng.)	Trail, B.C.
Wiggins, Reginald Heber	Med. 3	Sackville, N.B.
Wight, G. Earle	Med. 3	465 Moreau St., Montreal, Que.
Wight, Isobel May	Arts P	221 Elm Ave., Westmount, Que.
Wightman, John	Ap. Sci. 4 (Mi.)	P.O. Box 425, Digby, N.S.
Wightman, Lyall M	Com. 2	67 Osgoode St., Ottawa, Ont.
Wighton, Jean	Arts 3	134 Abbott Ave., Westmount, Que.
Wilder, Hartland Bates	Ap. Sci. 4 (Ci.)	680 Roslyn Ave., Westmount, Que.
Wilkes, James Frederick Ransom	Law 2	Brantford, Ont.

NAME	FACULTY AND YEAR	HOME ADDRESS
Wilkie, Archibald Leslie	Med. 4	Antigonish, N.S.
Wilkin, Wyllie Ivan	Med. 5	R.R. No. 2, Denfield, Ont.
Wilkinson, George	Arts 2	Grand Falls, Nfld.
Willard, Eugene Wallace Jr	Arts 3 (Hon.)	144½ St. Cyrille St., Quebec, Que.
Williams, Fred Nelson	Com. 1	Brysonville, Que.
Williams, Harold M	Ap. Sci. 1	300 Prince Arthur St. W., Montreal, Que.
Williams, Lewis Henry	Ap. Sci. 1	17a Wolfe St., Sherbrooke, Que.
Williams, Sydney Waldron	Ap. Sci. 3 (Chem. Eng.)	69 Esplanade St., Quebec, Que.
Williamson, David	Ap. Sci. 2	525 Mt. Pleasant Ave., Westmount, Que.
Willoughby, Gerald W	Com. 2	64 Powell Ave., Ottawa, Ont.
Wilson, Blake Manning	Com. 1	1238 Tecumseh Ave., Vancouver, B.C.
Wilson, Clifford Parnell	Com. 2	"Cedarhurst" Sault Ste. Marie, Ont.
Wilson, Catherine Robertson	Arts 4 (B.Sc.)	188 King St. E., St. John, N.B.
Wilson, Dudley Bazin	Arts 1	12 Burton Ave., Westmount, Que.
Wilson, Donald Gordon	Com. 3	Box 96, Truro, N.S.
Wilson, Frederick William	Ap. Sci. 1	46 Belvedere Rd., Westmount, Que.
Wilson, Gilbert	Ap. Sci. 2	Elmhurst, Kendal, Westmorland, Eng.
Wilson, George Andrew	Med. 3	R.R. No. 2, Kars, Ont.
Wilson, Harley	Ap. Sci. 2	455 Durocher Ave., Outremont, Que.
Wilson, Hugh Allen	Ap. Sci. 4 (Me.)	617 Belmont Ave., Westmount, Que.
Wilson, James Moir	Ap. Sci. 4 (Mi.)	538 St. Joseph St., Lachine, Que.
Wilson, Lucile Josephine (Left Jan. 12th. 1922.)	Arts P	46 Belvedere Rd., Westmount, Que.
Wilson, Percy Roy	Arch 3	"Cedarhurst" Sault Ste. Marie, Ont.
Wilson, Richard Bigerstaff	Com. 1	1770 Rockland Ave., Victoria, B.C.
Wilson, Ross	Com. 1	608 St. Charles St., Victoria, B.C.
Wilson, Selwyn Hamilton	Ap. Sci. 4 (Me.)	173 Cooper St., Ottawa, Ont.
Wilson, William Hollister	Arts 3 (Hon.)	150 Drummond St., Montreal, Que.
Wilson, William R	Arts 2	Athelstan, Que.
Windatt, Richard Donaldson	Com. 3	657 Wellington Crescent, Winnipeg, Man.
Windsor, Frank Laurence	Com. 1	389 Clarke Ave., Westmount, Que.
Winn, A. Reginald	Arts 3 (B.Sc. Hon.)	32 Springfield Ave., Westmount, Que.
Winslow, Terence Hansard	Com. 2	136 Middlegate, Winnipeg, Man.
Winter, Jacob Walter	Med. 2	1089 St. Urbain St., Montreal, Que.
Wittenberg, Abraham	Med. 2	1512 Ontario St. E., Montreal, Que.
Wittenberg, Samson Simon	Med. 5	1512 Ontario St. E., Montreal, Que.
Wolfe, Harry (Left early in session.)	Arts 1	309 Marlowe Ave., Montreal, Que.
Wolepor, Benjamin (Double Course.)	Arts 4. (B.Sc.). Med. 3	68, 7th. Ave., Lachine, Que.
Wolofsky, Max (Double Course.)	Arts 1	91 Esplanade Ave.,,Montreal, Que.
Wonham, Walter Richard	Ap. Sci. 4 (El.)	336 Wood Ave., Westmount, Que.
Wood, James	Ap. Sci. 1	764 Transit Rd., Oak Bay, Victoria, B.C.
Wood, Ralph Peirce	Med. 3	382 Main St., Everett, Mass.
Woodhouse, Douglas Hamilton	Arts 3 (Hon.)	67 McTavish St., Montreal, Que.
Wood-Legh, Kathleen L.	Arts 3 (Hon.)	524 Ocean Ave., Woodfords, Portland, Maine.
Woodley, Edward Henry	Arts 1	216 Girouard Ave., Montreal, Que.
Woodman, John Bernard	Dent. 3	6 St. Peter St., St. John, N.B.
Woods, Walter Hamilton	Ap. Sci. 3 (Mi.)	R.M.D. No. 4, Victoria, B.C.
Woodward, Eric Raymond	Ap. Sci. 4 (Chem. Eng.)	538 Dorchester St. W., Montreal, Que.
Woolfrey, Wilfred J	Arts 1	Point Fortune, Que.
Woollcombe, Edward Mickle	Ap. Sci. 3 (Me.)	2 Cloverdale Rd., Rockliffe, Ottawa, Ont.
Woolsey, George Roy	Ap. Sci. 2	Thetford Mines, Ont.
Woolward, Charles Desmond	Ap. Sci. 4 (Ci.)	756 University St., Montreal, Que.
Workman, Ephraim	Med. 1	10 Stanley St., Montreal, Que.

NAME	FACULTY AND YEAR	HOME ADDRESS
Wright, W. Stanley	Ap. Sci. 4 (Chem. Eng.)	435 Elm Ave., Westmount, Que.
Wylde, Charles Napier	Ap. Sci. 3 (Me.)	101 Crescent St., Montreal, Que.
Wylie, Robert Harold	Arts 1	Hallville, Ont.
Yokimischak, John	Med. 4	Pleasant Home, Man.
Yanovitch, Henry	Com. 2	1638 Esplanade Ave., Montreal, Que.
Yelin, Anna	Arts P	49a St. Famille St., Montreal, Que.
York, Geoffrey Wilson Brown	Med. 2	112 Strathcona Ave., Ottawa, Ont.
Yorston, Frederic Harrison	Ap. Sci. 3 (Chem. Eng.)	1948 Park Ave., Montreal, Que.
Young, George Franklin	Med. 5	Bothwell, Ont.
Young, Margaret Ellegood	Arts P	15 Aberdeen Ave. Westmount, Que.
Zinck, Russell Clark	Med. 3	Chester, N.S.
Zivkovitch, Milan (Left Oct. 10th. 1921.)	Dent. 1	Pozarevac, Servia.
Zuckerman, Joshua (Double Course.)	Arts 4. (B.Sc.) Med. 3	135 Rachel St. E., Montreal, Que.

THE SCHOOL OF PHYSICAL EDUCATION.

NAME	YEAR	HOME ADDRESS
Argue, Florence Rose	First	116 Nepean St., Ottawa, Ont.
Bain, Ethelwyn Doris	First	54 Windsor Ave., Montreal, Que.
Beer, Margaret Leonard	First	Amherst, N.S.
Burrell, Dorothy Anderson	First	287 Hampton Ave., Montreal, Que.
Clarke, Verna Maude	First	696 Sherbrooke St. W., Montreal, Que.
Coll, Catherine Elizabeth	First	Minto, N.B.
Collins, Jean	Second	446 Lansdowne Ave., Westmount, Que.
Dennis, Annie Bernice	First	14 Rupert St., Amherst, N.S.
Duff-Stuart, Katherine	First	1403 Balfour Ave., Shaughnessy Heights, Vancouver, B.C.
Ewing, Anne Gertrude	First	142 Duke St., St. John, N.B.
Fee, Doris Evelyn	First	314 Roslyn Ave., Westmount, Que.
Flanagan, Frances Ethel H	First	2218 Mance St., Montreal, Que.
Gardner, Florence Lilian	First	273 Melville Ave., Westmount, Que.
Gibson, Marjorie Helen	First	Franklin Centre, Que.
Gilmour, Jessie Katherine	P.	386 Sherbrooke St., Montreal, Que.
Gnaedinger, Henriette G	P.	4170 Dorchester St., Westmount, Que.
Heathcote, Elsie May	Second	11024, 123rd. St., Edmonton, Alta.
Jenckes, Eleanor Brooks	P.	161 Quebec, St., Sherbrooke, Que.
Klemhans, Grace Marguerite	First	390 Grosvenor Ave., Westmount, Que.
Lawford, Frances Estelle	First	178 Mansfield St., Montreal, Que.
Lawson, Alice Rudolph	First	4 Norwood Ave., Rockport, Mass.
Lehan, Gertrude Louise	First	817 Grosvenor Ave., Westmount, Que
Little, Estelle	First	4061 Tupper St., Montreal, Que.
MacDermot, Sara	Second	90 St. Matthew St., Montreal, Que.
Munro, Iveagh	Second	Pembroke, Ont.
Newmark, Grace	First	377 Grosvenor Ave., Westmount, Que.
Powell, Phyllis Evelyn	First	46 Aberdeen Ave., St. Lambert, Que.
Rexford, Marguerite Eliza	First	745 University St., Montreal, Que.
Reynolds, Margaret	Second	641 Grosvenor Ave., Westmount, Que.
Russell, Edna Maude	P.	4606 St. Catherine St., Westmount, Que.
Stone, Laura Kathleen	First	8 Borron Ave., Sault Ste. Marie, Ont.
Thompson, Doris	First	918 Queen St., Sault Ste. Marie, Ont.

SCHOOL FOR GRADUATE NURSES.

NAME	COURSE	HOME ADDRESS
Anderson, Gertrude Irene	Partial	Annapolis Royal, N.S.
Armour, Catherine Eva	Course B	545 Melrose Ave., Montreal, Que.
Armstrong, Martha	Course A	Melbourne, Que.
Bajus, Grace Stevenson	Cource C	Kingston, Ont.
Barrett, Mollie	Course A	Forteau, Labrador.
Beers, Gertrude Viola	Partial	106 Fitzroy St., Charlottetown, P.E.I.
Calder, Alice Margaret	Partial	40 Devonshire Rd., Aberdeen, Scotland.
Champagne, Charlotte	Course A	194 de l'Epée Ave., Outremont, Que.
Denovan, Christina	Partial	263 Prince Arthur St., W. Montreal, Que.
Hobden, Reita Rumney	Course B	Beamsville, Ont.
Holt, Mabel Kathleen	Partial	Montreal General Hospital, Montreal, Que.
Jamieson, Sarah Margaret	Course B	R.R. No. 1, Brantford, Ont.
Jennsen, Wilhelmine Darre	Course A	Apt. 8, 45 Laval Ave., Montreal, Que.
Latimer, Clare Minerva	Course A	Metcalfe, Ont.
McCraw, Jean Elinor	Course B	10 Glenlake Ave., Toronto, Ont.
MacEachern, Janet	Partial	Newcastle, N.B.
McNally, Eva Georgina	Course B	Butler, Montana.
Martin, Grace Raymond	Course B	38 Clergy St., Kingston, Ont.
Matheson, Elizabeth Florence	Course B	Bishop's Crossing, Que.
Matheson, Florinda M	Partial	Cornwall, Ont.
Matthews, Emily May (Left Nov. 1921.)	Partial	71 Staynor Ave., Westmount, Que.
Matthews, Gertrude M	Partial	71 Staynor Ave., Westmount, Que.
Murphy, Jane A	Partial	Montreal GeneralHospital, Montreal, Que.
Nash, Marion Elizabeth	Course A	Hamilton, Ont.
Pridham, Mabel Agnes	Course C	Grenville, Que.
Reed, Frances Leila	Course B	Montreal General Hospital, Montreal, Que.
Robertson, Catherine	Partial	Comrie, Scotland.
Ross, Margaret M	Course A	165 Prince St., Charlottetown, P.E.I.
Souter, Jean Ewing	Course B	173 East Ave. N., Hamilton, Ont.
Spanner, Gertrude Lilian	Course B	103 Dewson St., Toronto, Ont.
Stewart, Muriel Edna	Course A	55 St. Mark St., Montreal, Que.
Strumm, Flora Elizabeth (Left Oct. 12th, 1921.)	Partial	Mahone Bay, N.S.
Symonds, Isabel Mary D	Partial	Montreal General Hospital, Montreal, Que.
Wilson, Elizabeth	Partial	7 Polwarth Crescent, Edinburgh, Scot.
Wilson, Jean Scantlion	Course C	94 Gilmour St., Ottawa, Ont.
Winslow, Victoria Isabel	Course C	Ida, Ont.

DEPARTMENT OF SOCIAL SERVICE.

NAME	COURSE	HOME ADDRESS
Allaire, Grace Mae	Certificate	1204 Dunlop Ave., Menominee, Mich.
Barre, S. Morror	Partial	1161 St. Hubert St., Montreal, Que.
Bell, Olive	Partial	Revelstoke, B.C.
Bramley-Moore, Elma (Mrs.)	Partial	820 Dorchester St. W., Montreal, Que.
Bridgman, Della Merle	Partial	482 Strathcona Ave., Westmount, Que.
Burgoyne, Reginald Gordon	Partial	2501 Lafontaine St., Montreal, Que.
Carter, Lila Ann	Partial	953 Dorchester St. W., Montreal, Que.
Drummond, Mary Dorothea	Partial	448 Sherbrooke St. W., Montreal, Que.
Evans, Clara	Partial	Cobar Hall Cottage, Buxton, Eng.
Gurton, Helen	Partial	179 Dorchester St. W., Montreal, Que.
Hamilton, Amy (Left Nov. 7, 1921.)	Partial	Queen Victoria Memorial Hospital, North Bay, Ont.
Hurd, Genevieve Lawrence	Partial	245 Clarke Ave., Westmount, Que.
Hurd, Mary Ivadne	Partial	245 Clarke Ave., Westmount, Que.
Lamb, Ada Josephine	Partial	104 The Boulevard, Westmount, Que.
Lantz, Gwendolen	Partial	800 Dorchester St. W., Montreal, Que.
Lyman, Eleanore	Partial	127 King St. W., Kingston, Ont.
Malone, Edith	Partial	24 Cathcart St., Montreal, Que.
McKim, Elizabeth N.	Partial	648 Roslyn Ave., Westmount, Que.
Munro, Iris Edith	Partial	2299a Hutchison St., Montreal, Que.
Newton, L. P. (Mrs.)	Partial	181 Harvard Ave., Montreal, Que.
Presner, Anna	Partial	Apt. 10, 2152 Park Ave., Montreal, Que.
Ramsay, W. A. (Mrs.)	Partial	Apt. D, 2106 Park Ave., Montreal, Que.
Renshaw, Mary	Partial	152 St. Urbain St., Montreal, Que.
Ritchie, Susan	Certificate	133 Stanley St., Montreal, Que.
Rosenstein, Ethel	Certificate	157 East St., Sault Ste. Marie, Ont.
Scott, Winifred	Partial	2 Richmond Sq., Montreal, Que.
Webster, Marjorie	Partial	Royal Victoria Hospital, Montreal, Que.
Wood, Nell Malcolmson	Partial	199 The Boulevard, Westmount, Que.

THE GRADUATE SCHOOL.

Name	Course Registered For	Home Address
Bain, George William	M.Sc	84 Hutchison St., Montreal, Que.
Blair, Roy Joy	M.Sc	2143 Waverly St., Montreal, Que.
Boomer, Edward Herbert	Ph.D	559, 10th. Ave. W., Vancouver, B.C.
Brault, Paul G.A.	M.Sc	405 Durocher Ave., Outremont, Que.
Brow, James Barrett	M.Sc	88 Upper Prince St., Charlottetown, P.E.I.
Cameron, Sarah Symonds	M.A.	912 Comte St., Montreal, Que.
Carleton, Everett Augustus	M.Sc	770 Main St., Greenwood, Mass.
Charlton, Dorothy Kathleen	M.Sc	391 Wiseman Ave., Outremont, Que.
Clark, P. A. Gilchrist	M.A.	St. Andrew's Manse, Three Rivers, Que.
Clark, Robert James	M.Sc	1743 Burnaby St., Vancouver, B.C.
Common, Frank Breadon	LL.M	418 Clarke Ave., Westmount, Que.
Contant, Rebecca Amy	M.A.	275 Mance St., Montreal, Que.
Coulson, John Graham	M.Sc	Unionville, Ont.
Crowe, Marguerite	M.Sc	856 Lorne Crescent, Montreal, Que.
Davidson, Winnifred Hazel	M.A.	748 Decarie Blvd., Montreal, Que.
Davies, Vernon Russell	M.Sc	R.D. No. 1, Franklin, Man.
Dewar, Charles Leonard	M.Sc	184 Waverley St., Ottawa, Ont.
Dickson, Bertram Thomas	Ph.D	Macdonald College, Que.
Davis, Richard Edward G	M.A.	209 Howard Park Ave., Toronto, Ont.
Dodd, Geoffrey J	M.Sc	209 Carlyle Rd., Mount Royal, Que.
Dolan, Everett Patrick	M.Sc	Nelson, N.B.
Dolid, Jacob	Ph.D	539 East Main St., Bridgeport, Conn.
Dustan, Alan Gordon	M.Sc	312 South St., Halifax, N.S.
Eadie, Robert Scott	M.Sc	124 Hampton Ave., Montreal, Que.
Foran, Herbert Paul	M.Sc	733 Outremont Ave., Outremont, Que.
Fowler, Grant McAllister	M.Sc	Fort Coulonge, Que.
Gliddon, William Gilbert C	M.Sc	430 Nelson St., Ottawa, Ont.
Godwin, Kathleen Frances	M.Sc	Ste. Anne de Bellevue, Que.
Greaves, Clifford	Ph.D	Newcastle, St. John, Barbados.
Harbert, Eleanor May	M.A.	167 Westmount Blvd.,Westmount,. Que.
Harrison, Donald Ronald	M.Sc	Tamworth, Ont.
Hiebert, Paul Gerhardt	M.Sc	261 Furby St., Winnipeg, Man.
Higginson, Helen Magee	M.Sc	Buckingham, Que.
Hill, Eleanor Marguerite	Ph.D	768 St. Catherine Rd., Outremont, Que.
Howard, Waldorf Vivian	M.Sc	731 St. Urbain St., Montreal, Que.
Logan, John Fremont	Ph.D	60 Havelock St., Amherst, N.S.
Macallum, A. Douglas	M.Sc	307 Girouard Ave., Montreal, Que.
Macdonald, Albert Edward	M.Sc	Halifax, N.S.
MacFarlane, Walter Douglas	M.A.	Windsor, N.S.
McGlaughlin, William R	M.Sc	365 Northcliffe Ave., Montreal, Que.
McKinney, James Willard	Ph.D	Claresholm, Alta.
McLeod, William J	M.A.	Margaree Harbour, N.S.
McPherson, Anna Isobel	M.Sc	14 Fenwick Ave., Montreal West, Que.
Major, Thomas Grant	M.Sc	37 Crescent St., Montreal, Que.
Morrison, Donald McKay	M.Sc	c/o R. Fraser, Westville, N.S.
Newton, Dorothy Elizabeth	M.Sc	Ste. Anne de Bellevue, Que.
Nichol, Jean	M.A.	110 Colombia Ave., Westmount, Que.
Nichols, Laurence Howard	M.Sc	17 St. Mark St., Montreal, Que.
Olding, Maude Emma Mary	M.Sc	New Glasgow, N.S.
Phillips, Otto Bernard	M.Sc	145 Esplanade, Sydney, N.S.
Pickel, Margaret Barnard	M.A.	Cowansville, Que.
Quayle, William Conway	Ph.D	58 Arnold St., Princess Park, Liverpool, Eng.

Name	Course Registered for	Home Address
Reid, Regina Victoria	M.A.	104 Prud'homme Ave., Montreal, Que.
Renaud, Paul Emile	LL.M.	St. Remi, Que.
Richardson, James Keith	M.Sc.	384 Oxford Ave., Montreal, Que.
Roston, Lucille	M.Sc.	4444 Sherbrooke St. W., Montreal, Que.
Saunders, James Erling	M.Sc.	Westville, N.S.
Sperber, Lionel Albert	M.A.	141 Mt. Royal Ave. W., Montreal, Que.
Spier, Jane Dickson	M.Sc.	4015 Dorchester St., Westmount, Que.
Stephens, Henry Newburn	Ph.D.	Vermilion, Alta.
Symons, Jennie Laura	Ph.D.	Waterloo, Que.
Thomson, Walter Wilfred	M.Sc.	Apt. 4, 1267 Bernard Ave., Outremont, Que.
Troop, George Robert F.	M.A.	376 Metcalfe St., Ottawa, Ont.
Vessot, Charles Ulysses	M.Sc.	67 Balsam St., Ottawa, Ont.
Waldbauer, Louis J.	M.Sc., Ph.D.	60 Red Bank Ave., Woodbury, N.J.
Wheeler, Nathaniel Ernest	Ph.D.	17 Boutelle Ave., Waterville, Me.
Wisdom, Jennie B.	M.A.	New Glasgow, N.S.
Wiseman, Solomon	M.A.	1046b Henri Julien Ave., Montreal, Que.

FACULTY OF MUSIC.

Proceeding to the Degree of Mus.Bac.

FIRST YEAR

Brewster, Conrad
Eardley, Kathleen E.
Hibbard, Olive
Robinson, Catherine C

SECOND YEAR

Frey, Beatrice

THIRD YEAR

Campbell, Olive
Shearwood, Grace

Proceeding to the Diploma of Licentiate.

FIRST YEAR

Benjamin, Evelyn
Griggs, Glenna
Lightbound, Lillian I
Perry, Evelyn
Taylor, R. J. Cameron
Willock, Mary

Mann, Dorothy Dornal

SECOND YEAR

Black, Dora
Delagneau, Aimée L.
Hershorn, Bessie
Huff, Marion
Jameson, Natalie
Jaillet, Mary
Pitman, Mabel
Quint, Deborah

Read, Audrey

THIRD YEAR

Asner, Esther
D'Amour, Francoise
Graydon, Lillian
Rexford, Hazel

Shapiro, Evelyn

SENIOR PARTIAL STUDENTS.

Alexandor, Hulda
Anderson, Muriel
Armstrong, Dorothy, Mus Bac.
Ballon, Harry C
Barwick, Ruth
Birkett, Winifred L.
Block, Jennie
Bramson, Sylvia
Donald, Dorothy E.
Drummond, Helen M
Dubitsky, Minnie
Elkonece, Valentine
Elton, Lynne
Fenster, Fanny
Freedman, Leon
Gerson, Beatrice
Gillingham, Harold G.
Goltman, Frances L
Gross Isadore
Guilaroff, Sydney
Harrison, Mrs. W. H.
Hoffman, Hazel
James, Mary Frances
Jameson, Marguerite O.
Jamieson, Phyllis C.
Kanigsberg, Mildred
Karassik, Boris
Kydd, Helen M.
Lamplough, Ethel
Lanahan, Irene
Starke, Ethel
Strean, Bessie
Watson, Nora
Lee, Constance
Lesage, Faith
Levy, Morris
Lutton, Dorothy
Macdonald, Rose
Macfarlane, Marjorie
Mann, Audrey Meredith
Marks, Anne
Matheson, Jean
Miller, Jean B
Milston, Sonia
Molson, C. J. G.
Montabone, Mrs. Marie
Moscovitch, Esther
Nichols, Muriel
Nieghorn, Gertrude
Percival, Lillian
Percival, Muriel
Perrin, Kathleen Enid
Peterson, Mrs. J. E.
Preziosi, Marguerite V.
Rose, Bram
Rowan, Mrs. E. C.
Runnells, Orlean
Safford, Nellie
Scane, Marjorie
Schneider, Benny
Schultz, I
Shoffman, L.
Watt, Violet
Wilcock, Beatrice
Young, Abigail
Ziff, Herman

Watt, Galdys Edith

STUDENTS IN ATTENDANCE.

SESSION 1921-1922

	Undergraduates
ARTS.	
First Year—Men	109
Women	69
Second Year—Men	58
Women	41
Third Year—Men	65
Women	46
Fourth Year—Men	40
Women	29
Partials	111
	—568
SCHOOL OF COMMERCE.	
First Year—Men	76
Second Year—Men	66
Women	0
Third Year—Men	44
Women	1
Partials	10
	—197
APPLIED SCIENCE	
First Year	183
Second Year	122
Third Year	210
Fourth Year	142
Fifth Year (Architecture)	3
Partials	3
	—663
MEDICINE.	
First Year—Men	115
Women	2
Second Year—Men	118
Women	4
Third Year—Men	218
Women	1
Fourth Year—Men	137
Women	5
Fifth Year—Men	102
Women	5
Diploma of Public Health	3
Special Students	3
Partials	2
	—715
DEPARTMENT OF PHARMACY.	
For the Diploma of Pharmacy—Men	37
Women	5
	—42
DENTISTRY.	
First Year	47
Second Year	25
Third Year	36
Fourth Year	7
	—115

	Undergraduates.
LAW.	
First Year—Men	40
Women	1
Second Year—Men	19
Women	3
Third Year—Men	31
Women	1
	—95
AGRICULTURE.	
First Year—Men	10
Women	1
Second Year—Men	5
Third Year—Men	24
Women	1
Fourth Year—Men	19
Special Students	7
	—67
FACULTY OF MUSIC.	
Proceeding to the Degree of Mus. Bac.—Women	7
Proceeding to the Diploma of Licentiate in Music	21
Partial Students	68
	—96
DEPARTMENT OF SOCIAL SERVICE.	
Certificate Course	3
Partial Students	25
	—28
DEPARTMENT OF PHYSICAL EDUCATION.	
First Year	23
Second Year	5
Partial Students	4
	—32
SCHOOL FOR GRADUATE NURSES.	
Certificate Course	22
Partial Students	14
	—36
GRADUATE SCHOOL.	
M.A. Course Men	7
Women	9
M.Sc. " Men	32
Women	7
Ph.D. " Men	9
Women	2
LL.M. " Men	2
	—68
	2722
Less number whose names appear in more than one list	57
Total	2665

In addition to the above, 971 were enrolled in Extension Courses.

UNDERGRADUATE AND GRADUATE SOCIETIES.

No Club or Society which has not been approved by the Corporation is entitled to use the name of the University, or of the Royal Victoria College. Applications for such approval, accompanied by a copy of the constitution, should be addressed to the Registrar.

The Students' Council of McGill University.

OFFICERS 1922–23.

President—R. L. Hamilton, Med. '23.
Controller—J. W. Jeakins, B.A.
Secretary—C. D. Fraser, Com. '22.

Executive Council.

A. G. D. Tremain, Arts '23, Representative from Arts.
J. Robinson, Law '23, Representative from Law.
G. E. Crain, Sci. '23, Representative from Science.
L. Parlow, Med. '23, Representative from Medicine.
H. Laishley, Dent. '23, Representative from Dentistry.
B. C. Rochester, Sci. '23, President McGill Union.
R. McLagan, Sci. '23, President Rugby Club
M. H. Dineen, Sci. '23, President Hockey Club.
D. M. Johnson, Arts '23, President Track Club.
D. B. Foss, Sci. '22, President Athletic Association.
J. L. O'Brien, B.A., President "McGill Daily."

The McGill Union.

OFFICERS 1922–23.

President—B. C. Rochester, Sci. '23.
Vice-President—O. L. McCullough, Com. '23
Secretary—S. L. Harris, Med. '25.

"McGill Daily."

OFFICERS 1922–23.

President—J. L. O'Brien, B.A.
Editor-in-Chief—H. O'Hagan, B.A.
Managing Editor—G. H. Craik.
Sec.-Treas.—C. D. Fraser.

Undergraduates' Literary and Debating Siocety.

OFFICERS 1922–23.

Hon. President—Dean Laing.
I. U. D. L. Rep.—T. Winslow.
President—A. E. Tremain.
Vice-President—R. K. Jones.
Secretary—H. O'Hagan.
Treasurer—F. R. Terroux.

Arts' Undergraduates' Society.

OFFICERS 1922–23.

President—E. C. Amaron '23.
Vice-President—Cecil T. Teakle, '24.
Treasurer—H. McPhail, '25.
(Other Officers to be elected).

R. V. C. Undergraduates' Society.

OFFICERS 1922–23.

President—Lorna Kerr.
Vice-President—Phyllis Murray
Sec.-Treasurer—Frances McMaster.

Undergraduates' Society in Applied Science.

OFFICERS 1922–23.

Hon.-Pres.—Dean Adams.
President—D. W. Ambridge.
Vice-President—K. S. LeBaron.
Secretary—A. O. Leslie.
Treasurer—D. Williamson.
Asst. Sec.-Treasurer—L. Almond.

Undergraduates' Society in Law.

OFFICERS 1922–23.

President—William F. Macklaier, '23.
Vice-President—A. F. Carrol, '23.
Secretary— Dorothy Heneker, '24.
Treasurer—Frank Chauvin, '24.

Medical Undergraduates' Society.

OFFICERS 1922–23.

Hon. President—Dr. A. T. Bazin.
President—H. M. Elder.
Vice-President—C. P. MacLean.
Treasurer—E. J. Curtis.
Secretary—R. B. Henry.
Asst. Secretary—H. C. Dreger.
Councillors—Dr. F. E. McKenty. Dr. L. H. McKim.
Case Reporter—Miss E. C. Gibbons.

Philosophical Society.

OFFICERS 1922–23.

Hon. President—Dr. W. D. Tait.
Hon. Councillors—Dr. W. Caldwell. Dr. J. W. A. Hickson. M. M. de Silva, M. L. A. Sperber,
President—George Wilkinson,
Vice-President—H. S. Clarke,
Secretary—W. T. Robertson,
Treasurer—J. Taylor,

Chemical Society.

OFFICERS 1921–22.

President—Dr. W. H. Hatcher.
Vice-President—Dr. Gray.
Secretary-Treasurer—W. R. McGlaughlin, B.Sc.

Mining and Metallurgical Society.

OFFICERS—1922–23.

Honorary Presidents—Dr. J. B. Porter. Dr. A. Stansfield.
President—A. T. Powell.
Vice-Presidents—R. R. McNaughton. L. J. Foss.
Sec.-Treasurer—To be elected.

Physical Society.

OFFICERS 1922–23.

President—Prof. A. H. S. Gillson.
Vice-President—Mr. R. J. Clark.
Secretary—Mr W. C. Quayle.
Treasurer—Mr L. H. Nichols.

Commercial Society.

OFFICERS 1922–23.

Hon. President—R. M. Sugars.
President—A. E. Tremain.
Vice-President—W. H. Munn.
Secretary—W. B. Brewer.
Treasurer—W. J. Spence-Thomas.
Publicity Manager—To be appointed.

Historical Club.

OFFICERS 1922–23.

Hon. President—Dr. C. E. Fryer.
President—G. L. VanVliet.
Vice-President—A. O. Lloyd.
Treasurer—H. F. R. Holtham.
Secretary—A. T. McIntyre.

Electrical Club.

OFFICERS 1922–23.

Hon. President—Dr. L. A. Herdt.
Hon. Vice-President.—Prof. C. V. Christie.
President—G. L. Kezar.
Secretary—F. S. Howes.
Treasurer—S. M. Finlayson.
Councillors—G. H. Rochester, A. G. Dickinson, S. O. Craik, L. H. Armstrong, F. L. Foster.

Mechanical Club.

OFFICERS 1922–23.

Hon. President—Prof. C. M. McKergow.
President—J. L. Bieler, Sci. '23.
Vice-President—J. H. Holden, Sci. '23.
Sec.-Treasurer—G. M. Dick, Sci. '24.
2nd Year Representative—T. C. M. Godet, Sci. '25.
1st Year Representative—To be elected.

Political Economy Club.

OFFICERS 1922–23.

Hon. President—Dr. Stephen Leacock.
Hon. Vice-President—Dr. J. C. Hemmeon.
President—C. Ballantyne.
Vice-President—R. K. Jones.
Secretary—C. W. Webster.
Treasurer—H. R. Hampson.

Architectural Society.

OFFICERS 1922–23.

President—A. L. Perry.
Vice-President—M. C. Luke.
Secretary—P. C. Amos.
Treasurer—C. E. Shaw.
Committee { Prof. R. Traquair.
Asst. Prof. W. Carliss.

Cercle Français.

OFFICERS 1922–23.

Hon. President—Dr. P. Villard.
President—E. C. Amaron.
Vice-President—M. Gaboury.
Secretary—G. L. VanVliet.
Treasurer—J. H. Goldsmith.

Société Francaise.

OFFICERS 1922–23.

Hon. President—Mlle. L. Touren.
President—Alice Roy.
Vice-President—Margaret Elliot
Secretary-Treasurer—Lucienne Desbarats.
Representatives—Fourth Year, Florence Banfill; Third Year, Marjorie Pennington; Second Year, Dorothy Law.

Societe Litteraire Francaise.

President—Prof. Rene Du Roure.

Delta Sigma Society.

OFFICERS 1922–23.

Hon. President—Mrs. W. Vaughan.
Hon. Vice-President—Mrs. E. Irwin.
President—Miss J. Foster.
Vice-President—Miss E. Massy-Bayly.
Sec.-Treas.—J. Gurd.
Poster Manager—J. Wighton.
Representatives—Fourth Year, L. Fair; Third Year, R. Grant; Second Year, H. Perrin.

Student Christian Association of McGill University.

The active membership of this Association comprises members of McGill University and affiliated colleges who subscribe to a simple statement of purpose and who approve the objects of the Association.

The home of the Association is Strathcona Hall, which, in addition to affording ample accommodation for the work of the Association as a whole, provides residence for sixty-seven men.

Full particulars regarding the work of the Association are given in the annual Hand Book, and will also be supplied by the General Secretary.

OFFICERS 1922–23.

Hon. President—Mr. W. M. Birks.
President—H. R. C. Avison, B.A.
1st Vice-President—E. C. Amaron, Arts '23.
2nd Vice President—J. B. Ross, Med. '24.
Rec. Secretary—H. N. Bronson, Arts '25.
Treasurer—G. W. Mitchell, Com. '24.
Gen. Secretary—J. G. McKay, B.A., M.C.

The Student Christian Association of The Royal Victoria College.

OFFICERS 1922–23.

Hon. President—Mrs. F. D. Adams.
Hon. Adviser—Lorna Kerr.
President—Dorothy Cross.
Vice-President—Eileen Basken.
Secretary-Treasurer—Edith Baker.
Bible Study Convener—Katharine Dawson.
Missionary Convener—Mary Russell.
Conference Convener—Margaret Cameron.
Reporter—Kathleen Wood-Legh.

Chess Club.

OFFICERS 1921–22.

President—R. Du Berger, '23.
Vice-President—H. S. Jordan, '21.
Secretary-Treasurer—D. Cowan, '23.
Executive—C. Hunten, '23.; H. Johnston, '24.

Cosmopolitan Club.

OFFICERS 1921–22.

President—Amir Amerikhanian.

Old Scouts' Club.

OFFICERS 1922–23.

Hon. President—Prof. N. N. Evans.
President—E. T. Harbert.
Vice-President—G. T. Lafleur.
Secretary—C. R. Whittemore.
Treasurer—H. Aikman.
Executive Members—To be elected.

Social Service club.

No list of officers received.

Royal Victoria College Athletic Association.

OFFICERS 1922–23.

Hon. President—Miss Lichtenstein.
Hon. Adviser—Miss E. M. Cartwright.
President—Zerada Slack.
Vice-President—Carol Robertson.
Secretary—Marjorie McWatters.
Treasurer—Elsie Dunton.
Basket Ball Manager—Dorothy Russel.
Tennis Manager—Marjorie Leggatt.
Hockey Manager—Alice Roy.
Sports Manager—Marjorie Pick.
Swimming Manager—Edith Campbell.

Athletic Association.

OFFICERS 1922–23.

President—D. B. Foss, Sci. '23.
Vice-President—W. B. Brewer, Com. '23.
Secretary—C. D. Fraser, Com. '22.

Rugby Football Club.

OFFICERS 1922–23.

Hon. President—Walter Molson, B.A.
Hon. Treasurer—Dr. Sullivan.
President—T. R. McLagan.
Vice-President—D. U. McGregor.
Secretary—H. E. Hume.

Swimming Club.

OFFICERS 1922–23.

Hon. President—Dr Sullivan.
President—W. H. Laidley.
Vice-President—George Binns.
Sec.-Treas.—C. Anson, Sci. '25.
Manager—M. Gaboury.
Capt. Swimming Team—George Vernot.
Capt. Polo Team—C. Graham Browne.
Reporter—D. T. Forsyth.

Indoor Baseball Club.

OFFICERS 1922–23.

Hon. President—E. M. Cockshutt, Com. '22.
President—O. L. McCulloch, Com. '23.
Vice-President—E. Wight, Med. '25.
Secretary and Manager—W. C. S. Gamble, Com. '23.

Lawn Tennis Club.

OFFICERS 1922–23.

Hon. President—Dr. Baxter.
President—C. N. Ramsay.
Vice-President—W. F. Crocker.
Secretary-Treasurer—L. W. Brown.
Alumni Representative—Dr. Ross Cleveland.
Arts Representative—D. Morrice.
Science Representative—P. L. Douglas.
Medicine Representative—J. Wright.
Law Representative—J. M. McDougall.

Harriers' Club.

OFFICERS 1922–23.

Hon. President—Dr. Macmillan.
President—N. Egerton.
Vice-President—R. E. Legg.
Secretary-Treasurer—J. C. Antliff.
Captain—R. H. Wiggins.

Ski and Snow-Shoe Club.

OFFICERS 1922–23.

Hon. President—Lieut.-Col. H. Molson.
President—A. O. Leslie.
1st Vice-President—R. L. Whittal.
2nd Vice-President—W. Carter.
Secretary—C. N. Ramsay.
Treasurer—E. A. Sherrard, Sci. '23.
Manager—D. R. Anderson.
Committee—H. Smith. J. Lane. W. F. Macklaier. R. S. Wade.

Hockey and Skating Club.

OFFICERS 1922–23.

Hon. President—W. T. Stenson.
President—M. H. Dineen.
Vice-President—J. R. Dempsey.
Secretary and Manager—G. C. Quackenbush.
Representatives—Medicine:—F. G. Shaver. Science:—Robert Davies. Arts and Law:—W. C. S. Gamble. Dentistry:—J. G. Lynch.

Track Club.

OFFICERS 1922–23.

Hon. President—Dr. F. Tees.
President—D. M. Johnson.
Hon. Secretary-Treasurer—Dr. C. Macmillan.
Vice-President—R. E. Legg.
Secretary and Manager—R. B. Henry.

Boxing, Fencing and Wrestling Club.

OFFICERS 1922–23.

President—W. B. Brewer, Com. '23.
Vice-President—A. V. Armstrong, Sci. '23.
Secretary and Manager—G. R. Currie, Com. '23.
Representatives—G. M. Morris, Med. '24. E. R. Irvine, Sci. '25. C. H. Aikman, Arts '24.

Western Club of McGill University.

The Club has for its objects the furthering of the interests of McGill in the four Western Provinces and the helping of new students to McGill from these Provinces.

Students from Manitoba, Saskatchewan, Alberta, or British Columbia, coming to McGill for the first time, are requested to communicate with the Secretary of the Club, care The Union, McGill University, Montreal.

OFFICERS 1921–22.

Hon. President—Dr. J. L. Todd.
President—Joseph A. Parker, Alberta.
Vice-President—J. M. Jones, B.C.
Secretary—S. K. Clark, Sask.
Treasurer—J. G. P. Cleland, Sask.
Committee—British Columbia:—J. S. Helmcken.
Alberta:—E. M. Cooper.
Saskatchewan:—G. S. Elliot.
Manitoba:—A. H. Sweet.

Eastern Townships Club.

OFFICERS 1922–23.

Hon. President—Hon. W. G. Mitchell, M.P.
President—Henry Cousens.
Vice-President—H. F. Hall.
Secretary—H. R. Cleveland.
Treasurer—K. W. Hutton.
Patrons—Sir Arthur Currie, Mr. A. R. McMaster, Mr. A. S. Johnson, Sr., Mr. John Hackett, Mr. A. J. Brown.

The Maritime Club of McGill University.

The object of this Club, which was formed by the amalgamation of the Nova Scotia and New Brunswick and Prince Edward Island clubs, is to promote, in every way possible, the best interests of students coming to McGill from the Maritime Provinces. Such students, are urgently requested to communicate with the Secretary of the Club, who will be glad to render them all assistance in his power.

OFFICERS 1922–23.

Hon. President—Dr. J. C. Macmillan.
President—D. J. MacGillivray.
Vice-President—Miss D. Teed.
Secretary—R. K. Jones.
Treasurer—C. Thompson.

American Club.

OFFICERS 1922–23.

Hon. President—Prof. Francis E. Lloyd.
President—Norman Livshin.
Vice-President—Donald E. Tinless.
Treasurer—Mortimer H. Lewis.
Secretary—R. K. Pendleton.

Newfoundland Club of McGill University.

OFFICERS 1922–23.

Hon. President—Dr. W. H. Hatcher, Ph.D.
President—L. J. Jackman, Med. '23.
Vice-President—H. Wells, Arts '23.
Secretary—J. O. Fraser. Med. '24.
Treasurer—C. F. Horwood, Com. '23.
Reporter—M. F. Cashin, Med. '23.
Social Committee—R. H. LeMessurier, Arts '23.; J. H. G. Way, Law '23.; H. Ellis, Sci. '25.

Graduates' Society of McGill University.

OFFICERS 1922–23.

President—H. M. Little B.A., M.D.
1st Vice-President—C. F. Martin, B.A., M.D.
2nd Vice-President—Willis Chipman, B.A.Sc.
Hon. Secretary—Prof. N. N. Evans.
Hon. Treasurer—Prof. H. M. Lamb.
Executive—A. P. S. Glassco, B.Sc.; J. G. Ross, B.Sc.; C. B. Keenan, M.D.; F. J. Tees, B.A., M.D.
Executive Secretary—John W. Jeakins, B.A., McGill Univ., Montreal.

Alumnae Association of McGill University.

OFFICERS 1922–23.

President—Miss May Idler, B.A.
1st Vice-President—Mrs A. D. Fry, B.A.
2nd Vice-President—Miss Catherine F. MacKenzie, B.A.
3rd Vice-President—Miss A. Muriel Wilson, B.A.
4th Vice-President—Mrs Walter Brown.
Cor. Secretary—Miss Helen R. H. Nichol, M.A., 110 Columbia Ave., Westmount.
Treasurer—Miss Gwyneth L. Craig.

District of Bedford McGill Graduates' Society.

OFFICERS 1922–23.

President—Hon. Mr. Justice Hackett.
Secretary-Treasurer—Rev. Ernest M. Taylor, M.A., Knowlton, P.Q.

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